THE APPLICATION OF LOGIC

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THE APPLICATION OF LOGIC

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BY

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'THE PROCESS OF ARGUMENT,' 'THE USE OF WORDS IN REASONING,'
ETC. ETC.

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PREFACE

THIS book attempts to state with a minimum of technicality the logical doctrines that remain when we discard those parts of the traditional logic which are misleading in application. While trying to approach the difficulties by easy stages, and fully recognising that simplification is a gain wherever its cost in error is not too great, I have found it necessary to show on occasion the harm that is done by the delusive simplifications on which the traditional logic is based. But as the aim of the book is construction rather than technical criticism the special references desirable for the latter purpose have here been generally omitted.

The old system has lost much of its former authority both as a court of appeal in real disputes and as a scientific analysis of real thinking. But it is still unfortunately retained as an elementary subject of instruction. So used, it has the dangerous merit of lending itself easily to the setting of definite questions in an examination; and on that account it remains formidable. Clearly, too, a recognition of the danger which this kind of ease and simplicity entails is not by itself sufficient to give us a positive method of teaching the subject. We seem to need rather a thorough reconstruction, inspired by more attention to the difficulties of actual thinking, and more desire to meet them.

The plan of the book is partly due to suggestions made by Mr. F. Kettle, Mr. J. G. Hamilton, and Mr. Pitt Kennedy. I have also to acknowledge with gratitude the help given by the two former, and still more by Dr. F. C. S. Schiller, in correcting the proofs. The general agreement between Dr. Schiller's views and mine has made his advice especially valuable.

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PART I

THE PROGRESS OF DISPUTES

CHAPTER I

INTRODUCTION

WHATEVER else logic may be or become, when the study is carried as far as possible, it is primarily a branch of knowledge intended to help us in distinguishing between good and bad arguments. And the arguments it has in view are not only those which arise between two different people or parties, but also the internal debates which a man may hold with himself in cases of doubt or perplexity.

So far as our internal debates can be examined at all, they appear to differ from the ordinary controversial ones chiefly in the good temper with which they are carried on. There is generally some reluctance felt in disagreeing with ourselves, and when the unfortunate necessity arises we make reasonable allowance for our own different opinions or points of view. We do not, for example, violently accuse ourselves of dishonest or stupid inconsistency even when we find our views contradicting each other. We do not bluster to our other self and say to him, "Where is your proof of this astounding assertion?" We do not call his reasons absurd, or his alleged facts ridiculous, but can tolerate further enquiry into their truth and value.

There is, moreover, also another broad difference between puzzled reflection and the noisier kinds of dispute; the latter are much more easily[1] observed in detail by a looker-on. For that reason we shall here keep in view controversy rather than doubt, though many of our results will be equally useful in both these branches of the application of logic.

It is worth noting also that in pursuing this enquiry there is no need to assume that the world is a great debating society, and the men and women in it continually walking about seeking whom they may convince. People do not as a rule carefully and deliberately start subjects to discuss; but most disputes arise casually out of innocent remarks. Nor need we here suppose that argumentation is the sole motive power in the world of thought. We can agree with much that is said[2] about the superior efficacy of sentiment to reasoning, though we need not therefore assume that wherever they clash the latter ought to give way. And again, we may freely recognise the fact that most people dislike being argued with, and that many distrust an unwelcome conclusion all the more if it claims to be "logical." For our purpose it is enough that, in spite of these disinclinations, however wise and justified, and in spite of the prevalence of unreasoned sentiment, we all do on occasion get drawn into making an appeal to some one's reason—into defending an opinion already put forward, or trying to convince the other man (or his audience) that he is making a mistake. Occasions of this kind are what we are now to keep in view,

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[1] One reason for this may be found in the fact that the changes in our own opinions generally occur by imperceptible steps, and so the opposition between the earlier and the later view is softened and concealed.

[2] In his *Fragment on Progress* Mr. A. J. Balfour forcibly expresses

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this familiar truth as follows : "A community founded on argument would soon be a community no longer. It would dissolve into its constituent elements. Think of the thousand ties most subtly woven out of common sentiment, common tastes, common beliefs, nay, common prejudices, by which from our earliest childhood we are all bound unconsciously but indissolubly together into a compacted whole. Imagine these to be suddenly loosed and their place taken by some judicious piece of reasoning on the balance of advantage which, after making all proper deductions, still remains to the credit of social life. Imagine nicely adjusting our loyalty and our patriotism to the standard of a calculated utility. Imagine us severally suspending our adhesion to the Ten Commandments until we have leisure and opportunity to decide between the rival and inconsistent philosophies which contend for the honour of establishing them !" All this may be freely granted, if only we do not jump to the conclusion that therefore the voice of reason should never be heard. May not the reasoned conclusions of one age become the instinctive beliefs of another ?

independently of the question whether they arise too often or too seldom, or of the question as to the value of disputation as a whole. When once we are drawn into an argument—even by no fault of our own—we naturally want to carry the business through successfully. The commonest experience in these cases is that we do not get all the success we think we deserve; and then perhaps we wish we had studied beforehand the tricks that an opponent is likely to use against us. In the same way a civilised and peaceful nation may have occasion to regret its unwarlike habits and lack of military training.

And, after all, those who really dislike argument can always let it alone. A dispute, like a quarrel, takes two to make it, and there is no compulsion on anybody to argue if he prefers to be silent. The only compulsion, that is, comes from our own desire to convict the other person of error, or at least to correct his view to some small extent. That familiar situation, the "agreement to differ," is reached whenever two persons choose to consider a particular argument not worth the trouble. And a flat refusal to argue is still easier. Even under great provocation any one may take this peaceful (or contemptuous) attitude. We find ourselves, let us imagine, accused of putting forward a rash and unfounded assertion; the accusation may be false and yet not worth correcting. Why trouble to notice it unless we want to do so? No doubt most people are human enough to want to rebut a charge of asserting more than they have a warrant for, especially if there happens to be a larger audience in view. Still, our own wishes are the only compulsion, and any given person may rise above this human weakness—or pretend to do so. To that extent it is true that no one can be compelled to argue.

Another general maxim worth remembering about controversy is that every objection admits of an answer, and that the effect of a relevant answer always is to raise a new question. What seems at first to conflict with the universality of this rule is the fact that discussions do occasionally come to an end. There have been cases where people have been silenced in argument, and even some cases where they have been convinced. But neither silence nor a change of view is necessarily final, still less is it conclusive proof of error. We can easily imagine arguments where the right would be unmistakably on one side or the other, but the difficulty is to imagine real people engaging in them, at least with any spirit or persistency. Though our opponents, like ourselves, are liable to error, the errors to which they are persistently attached are alluring errors, errors not wholly unrelated to what we should call the truth, but rather missing it by some apparently small if really important difference. Thus, whichever side we happen to take in a dispute, we must never be surprised to find that a case of some kind can be made out for the opposite side. In that fact lies the vitality of disputes in general, and therefore the need of studying carefully all that bears upon the subject. By means of such study we shall learn that every attack upon an argument has its corresponding defence, which may or may not be justified; and that every defence, in the same way, leaves room for an answer, the justice of which remains to be questioned and proved. It is generally worth while, therefore, to try to make out exactly how an opponent was tempted into his error, if error it be. The fact that it seems to him not error but reasoned truth provides him automatically with an answer—good or bad—to any possible attack; and his answer helps to show us how he was tempted.

And if we cannot accept his answer as convincing, this inevitably raises a new point of dispute. The original question hangs fire till some other question is disposed of; it may be a question of (what is called) simple fact, or something deeper and more subtle. For then the objector has to show exactly why the answer fails to satisfy him, and in order to do this he must dig down to the untruth—simple or otherwise—which has appeared true to his opponent. It is this process of raising and discussing "previous questions" which is on the whole most characteristic of the course of dispute in general. This is the chief business of dispute at its best and fairest. The proper function of each party in a dispute is to discover points overlooked by the other side; that is, to show that the other party's view of the matter would have been different, if instead of jumping to his conclusion he had stopped to ask himself such and such a previous question.

There is more than one use to which we may put the recognition that every objection is likely to meet with an answer. For instance, there are some who would use it to show the futility of human hopes of reaching final truth; others again would use it to show that our own convictions are alone worth considering and that disputes are a waste of time. But the uses I here propose to put it to are different from either of these. Assuming—as in practice we all do[1]—that argument is sometimes worth while, and that truths of a comparatively satisfactory kind can be reached and imparted by reasoning, then one result of recognising that every objection admits of an answer, is to keep us prepared to find our own objections answered, and therefore to study beforehand the kind of answers that are likely, and the new questions that will arise out of them. For the purpose of holding our own in controversy this knowledge is always useful; indeed there is only one thing still more necessary, namely, a sufficient acquaintance with the facts of the matter discussed. But, other things equal, the man who knows beforehand what answers to expect, and therefore what new questions are likely to obstruct the path to agreement, has the best chance of dealing with such obstructions when they arise, and of maintaining a clear view of the constantly changing situation between the opposite parties.

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[1] For example Mr. Balfour, in spite of the passage quoted on p. 5, usually takes the trouble to make an appeal to his hearers' or readers' reason.

Our general view of argument, then, is of something that is always with us, though it does not constitute the whole of life. Arguments daily arise about matters small and great, and the smaller arguments are of interest chiefly in so far as they are supposed to have some bearing on the greater ones. But because their larger outcome is often remote, or difficult to see, arguments in general are far from being all on the same level of apparent importance, and the majority can be taken up idly and dropped without regret whenever we like. They are fragmentary, inconsequent, and half-hearted, or the interest in them is of an irregular kind, rising and falling for reasons of which we are seldom clearly conscious. The justification for studying the process carefully is that some arguments on some occasions are felt to be important.

And, given one of these occasions, the usual course of it is not to reach a sudden conclusive ending, but to continue for a long time, or to turn up again later in a slightly altered form. One question, as we have seen, is usually found to lead to another, and so the immediate issue is constantly changing, and the "burden of proof" is constantly being shifted from one side to the other. The commonest experience in such cases is that more effect is produced upon the opposite views than either party is at first able to admit, or even to see. Normally we do not convince our opponents, nor do they convince us, and yet each party may sow the seeds of future change in the other party's opinion. Both parties may be led to take into account things that they would otherwise have failed to notice, and though the old phrases and the hostile banners may be carefully preserved they pick up new or modified meanings. The shallow truth that no one is ever convinced by argument thus loses much of its point. Though every one resents being hustled into recanting his views, no one objects to being led to modify them if only you build him an easy bridge. And the art of doing this depends largely on remembering that nothing can be done in the way of convincing an opponent except by helping him to use his own common sense. You would not be disputing with him if he could be content to use yours.

In Part I. we shall consider only the more satisfactory kind of disputes—those which are clear of the worst preliminary obstructions. We shall examine, first, not the misunderstandings in which so many actual controversies persistently flounder, nor the devices by which a shifty assertor tries to evade the issue or a plausible sophist tries to make out a case, but the more hopeful positions which arise where no fault is found with the argument except that the facts adduced as evidence do not quite amount to sufficient proof. After the process of proof has thus been examined, we shall consider in Part II. some of the chief tricks and other obstructions of argument. Part III. is in effect a summary of some of the more technical points taken separately, but connected with the rest of the book by means of references.

It is, therefore, in Part I. especially that disputes are viewed as making steady progress towards a happy ending by means of a gradual increase in the definiteness with which their problems are perceived and dealt with. For it is in these fortunate cases, where the initial confusions have been avoided or discarded, that disputation has most of its value in the search for truth. The arts of the quibbler are there reduced to their least opportunity for doing effective harm. But I hope the reader will also discover in Part II. that at no time need we regard them as having much strength. The best chance for the tricky disputer lies in catching us off our guard.

As a matter of technical logic the chief peculiarity of this book lies in its recognition that in all doubt or dispute there are two points of view to be taken into account. The traditional logic has yielded to the temptation of neglecting this difficulty, and tends to contemplate "truth" only in abstraction from the different appearances which a claim to truth may wear to different people. Actual argument is not concerned with truth in so purely formal a sense as this. The assertions which an applicable logic has to consider are specially those that are *questioned*, those that may turn out to need correction. It is bound to recognise that no "truth" can at once convey information to a given person and be beyond that person's power to question. For example, there is a sense in which the "Laws of Thought" and the "Law of Causation" are indisputable; but this is also the sense in which they give no information to any one. They are part of everybody's mental furniture, and to that extent they are both indispensable and (as statements) superfluous. Yet there is a way in which they may mislead us. There is such a thing as verbal inconsistency which looks like a breach of the Laws of Thought without in fact being so, and there are many cases where two causes apparently the same are found to produce different effects. Thus it is not only possible to dispute the application of an axiom, but in all actual disputes the vitality or two-sidedness of the doubt depends precisely upon such difficulties of application. The application of axioms, therefore, instead of the contemplation of the "truth" there may be in them apart from their application (or, when so applied, as to meet with agreement) is necessarily the concern of any logic which attempts to consider fairly what each of a pair of disputants may have to say. On the other hand, a logic which declines to make this attempt seems to me to be neglecting its vocation. Even when it prefers to call itself metaphysics, in the hope of rising above the wrangles of earth, it never does succeed in getting free from them. Even the most confident metaphysician always finds opponents in this imperfect world.

CHAPTER II

THE GROUND OF AN INFERENCE

It sometimes happens in a dispute that the point at issue is clearly and steadily understood by both the parties, and also that what is disputed is not the truth of the facts alleged as evidence, but their relevance or evidentiary value. There are plain issues, like the question whether the claimant is or is not the person he represents himself to be; and there are plain facts that may be appealed to, such as the presence or absence of a particular mark on his left arm. In all inference alleged facts of some sort are appealed to, and in many inferences these facts are obvious or undisputed, and the conclusion, though disputed, is free from any doubt as to its meaning.

We will now look first at arguments which approach this more satisfactory type, and leave out of sight for the present all the wrangles that are chiefly due to confusion, and also the assertions that are based on grossly erroneous facts. In this way we shall arrive as quickly as possible at a general notion of the structure of argument proper. For though disputes only too often arise and continue where the point at issue is wholly misconceived, or where ludicrous errors or downright falsehoods are appealed to as facts, such disputes have hardly arrived at the dignity of argument. We may say this without supposing that the distinction between what is properly argument and what is not so is anything more than a rough and convenient one. We need not deny that gross misunderstandings of the point at issue shade off into subtle ones imperceptibly, or that the same is true of gross and subtle errors of fact. It is only, therefore, for the purpose of getting a broad outline of the nature of argument, especially as a lengthy and continuing process, that we shall try to fix attention first on the less unsatisfactory kinds of dispute. When once we have got the outline clear, this rough distinction will have served its purpose; we shall then be better able to see how and where the slacker kinds of dispute are defective. For the present we may regard the latter as mere preliminaries of argument, or initial steps that sometimes have to be passed through before an argument can begin. When you have to complain that an opponent is vacillating between two different conclusions, you are only trying to clear an obstruction out of the way of a possible argument with him. And when you have to complain that his facts are hopelessly wrong you are at most beginning another argument with him on a "previous question." For you cannot take seriously an attempt to prove two different conclusions from the same set of facts; and where the alleged facts, however relevant they might be if they happened to be true, have the unfortunate defect of being false, there is no need for examining the evidence further till true facts are produced. The original point at issue, therefore, has to be shelved till the question of fact is settled. If, for instance, a speaker in Parliament bases an argument on the fact that "the people of Malta have been restrained from exercising the right to hold public meetings," and this is met by the assertion that "nothing of the kind has happened; on the contrary, special trains have been run to facilitate the meetings," it is clear that the first speaker's argument amounts to nothing at all until we can find out which of the two opposite accounts of the fact is the true one.

§ 1. *The "Major Premiss."*

Supposing, then, that we have before us a conclusion which is allowed to be clear of doubts as to its meaning, and also an undisputed fact or set of facts claimed as sufficient proof of such conclusion, how shall we decide in given cases whether the claim is justified? Can we, for instance, say precisely what the structure of a valid argument must be, and then compare the actual argument with this ideal type?

Something of the kind we all frequently do almost by instinct, or at least from a very early age, and before we have made any direct attempt to study logic. Almost instinctively the common-sense reasoner, young or old, understands that inference is a process which makes use of *general rules*; that sound inference makes use of trustworthy general rules, and that any defect in an inference (from a fact admitted true) points to a belief in some general rule which is not quite trustworthy. For example, there is the familiar inference from smoke to fire; every one sees that to recognise the inference as a safe one is the same thing as to recognise the truth of the general rule that where there is smoke there is fire. And on the other hand, if we find any fault with the inference from to-night's red sunset to to-morrow's fine weather, this is the same as to recognise that the rule connecting these two phenomena is not perfectly general,[1] and therefore not quite trustworthy. From the time when we first begin to think at all, we grow more and more accustomed to the notion of general rules that cover particular cases; of "natural laws" that explain particular happenings; of human laws and precepts that require interpreting and observing in detail; of principles that justify an act or an opinion. Whatever mistakes we may make in conceiving and applying rules or principles or laws of Nature, the habit of trying to conceive and apply them is so ingrained in us from early childhood that we all agree about the importance and need of this operation. We habitually assume that every particular case has some general rule or rules behind it, and that our judgments about particular cases derive their value from the truth of the rules implied in them. And there is an early branch of study—elementary geometry—which helps to convince us that any reasoning which is close or exact must consist in the application of strictly universal rules to particular cases. Euclid's arguments are evidently all of this type. If, for example, the fact that the lines AB, AC, are radii of the same circle is given

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[1] It is a "general rule" only in a slacker sense of that term. In

order to prevent confusion between these two meanings of the word "general," it is convenient to speak of "universal" or "strictly universal" rules when we want to emphasise the quality that makes them trustworthy. But it is also legitimate and customary to mean by a general rule a rule which applies to a whole class (genus) of cases without exception. This double meaning of the word "general" is not of a kind which need cause any serious trouble.

as proving that those two lines are equal, we see that it can only do so by means of the strictly universal rule that *all* (*i.e.* any two or more) radii of the same circle are equal. To find fault with the inference is impossible unless we can also find fault with the rule implied in it.

There is nothing surprising, therefore, in the fact that this view of the nature of reasoning, or inference, was adopted by the system of logic which has been handed down to us from early times. That system bases itself on the assumption that a universal rule is always the connecting link required between fact and conclusion, and is thus the necessary ground of any valid inference. Such, we are told, is the ideal form of argument or reasoning, and in so far as our actual inferences fail to correspond to it they are untrustworthy. We must not, for example, take a rule which is roughly true but liable to exceptions,[1] and use it as if it were perfectly universal—use it without taking its exceptions into account. Evidently a rule which is admitted to have even a single (unspecified) exception fails to exclude the chance of error in the conclusion. For instance, the rule that nearly all the tickets in a lottery are blanks will not serve as a perfectly safe ground of inference about a particular ticket. For all we can tell, this particular ticket, No. 1000, may be the one that is going to win the prize.

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[1] *I.e.* a "general" rule in the slacker sense of that term.

A universal rule, thus used for inference, was called the "major premiss," or the "principle" or the "ground" of an argument, and whether it happened to be expressly stated or not it was supposed to be always implied. So that doubts as to the force of an admittedly true fact in proving the conclusion were supposed to be always translatable into doubts about the strict universality of the rule which was needed to give such fact its conclusiveness. Any doubts, for instance, of the value of the fact that Smith is a socialist, towards proving that Smith is an unwise man, would be translatable into doubts about the strict truth of the rule that all socialists are unwise men. For if Smith, as a matter of fact, is a wise man and also a socialist, the rule is thereby shown to have at least one exception. On the other hand, if both the rule and the fact were strictly true, the conclusion (that Smith is an unwise man) would follow as a matter of course. The rule (major premiss), the fact (minor premiss), and the conclusion would together form what is called a "syllogism."[1]

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[1] The simplest and clearest definition of a "syllogism" is that it is the process of reasoning which consists in applying a *general rule to a particular case.* We may for the present neglect all questions about the structure of a syllogism which go beyond this essential and constitutive aspect of it. But see pp. 77, 185-7, and § 41.

It is difficult to see clearly both the truth that is in this old logical doctrine and also its power to mislead us when we try to apply it. But since the difficulty is typical of much that perplexes our thought both in everyday matters and in philosophy, and since it is also of first importance to the theory of logic as applicable to disputes, it will be well worth our while here to dwell upon it and to seek its solution. For that purpose the first requisite is to understand exactly how a truth which is undeniable can be misleading when applied. There is only one way—namely, when there is any doubt what actual cases the undeniable truth is intended to cover. And human thought is full of examples of this difficulty. Among the best known of them are those which arise out of our attempts to apply proverbs and other maxims of conduct. Such maxims are, no doubt, a highly concentrated form of wisdom, embodying the ripe experience of many generations of men. So far as we can manage to apply them rightly they give us an excellent guide in life. But then they are also notoriously apt to be misapplied. "Evil communications corrupt good manners"? So they do, but how are we to distinguish between communications which really are evil and those which only a prig would condemn? "More haste, less speed"? Are there, then, no occasions on which we must either act in a desperate hurry or lose our chance of action? Such puzzles when they arise have to be settled by means of some knowledge outside and beyond what is given by the maxim itself. Maxims need, by common consent, a little judgment in applying them; they need *interpreting* with intelligence.

Further on we shall make acquaintance with this difficulty in some of its subtler forms, and we shall see how wide-spread it is throughout almost every region of thought. But for the present all we need notice is that a statement may be true—may even be axiomatic and undeniable—and yet misleading through some *vagueness* in it which permits of its misinterpretation. For that is precisely what is wrong with the logical doctrine that every inference, every argument from admitted facts, has a major premiss on the truth of which the soundness of the inference depends. The doctrine is undeniable so long as we put no false interpretation upon it, but we are likely to do this frequently if we imagine that it can be applied to actual arguments—and especially to disputed arguments—without considerable risk of error.

§ 2. *Complexity in Argument.*

In what way, then, is this venerable doctrine vague? Some indication of the answer is given by a phrase that we used above—that common sense always sees a rule *or rules* behind any particular case. That is say, it sees a single rule (a major premiss) wherever the argument appears to be a simple one, but it also sees that a single rule is not to be found where the argument is complex. We will presently look at some common and obvious kinds of complex argument in order to see that no one, whether he is a logician or not, imagines that they can be criticised through a single implied major premiss. For even the old logic, just like common sense, freely admits that there are such things as complex arguments, and that the syllogistic form of inference represents only what may be called the unit of reasoning, the simplest mediate argument there is.

If we could always see at a glance, and beyond any doubt, which actual arguments are simple and which are complex, the old logical doctrine would be clear and satisfactory enough. No one denies its truth as applied to inferences from "perfectly simple facts"—whatever these may be—or even from facts which we are all content to take as perfectly simple. So long as we have in view, for instance, arguments of a simplicity equal to the one about a pair of lines which are radii of the same circle, no question would arise either as to the need of a major premiss or as to the precise form it should take. Nor would any one deny that arguments of this admittedly simple type are to be found in frequent daily use outside elementary mathematics. Even our most complex inferences may generally be viewed as constructed of many simple ones put together; and wherever the simplicity of a given argument, or fragment of argument, is taken for granted, we all agree to treat it as a syllogism.

But trouble and difficulty begin as soon as we try to apply the old logical doctrine to arguments in general, including those which are disputed. For one notable characteristic of disputed arguments—even where their conclusions are free from vagueness, and where the facts are taken as true—is that as a rule they lack simplicity. That is, indeed, the most usual reason why the dispute has arisen, and almost the only reason why it continues or recurs. Sometimes both parties would agree that the inference is a complex one, but even then they disagree about the extent and kind of its complexity; and often we find one party claiming that the matter is "perfectly simple," while the other party sees complications. Disputes usually arise, in short, just because a complexity seen (or imagined) by the one party is (or appears to be) unseen by the other. Every one knows that overlooked details in our facts are the chief source of error, and especially of the errors that belong to lively and durable disputes where there is a good deal to be said on both sides. And the overlooking of important details is only another name for excessive simplicity of view.

The vagueness, then, of the doctrine that the binding force of a simple inference—an inference, or argument, from a "simple fact"—is to be found in its major premiss, consists in our inability to apply that doctrine satisfactorily except to arguments which are undisputed. Just where dispute begins doubt begins as to whether the argument is simple or not. We shall never understand the process of disputation, therefore, so long as we imagine that simple arguments and complex ones are easily distinguished from each other at first inspection, in the same way as we can distinguish, say, between simple and compound addition, or between an outline sketch and a shaded picture. Within any argument already admitted to be complex we can easily distinguish between the argument as a whole and its separate parts. But how are we to know that any given part does not itself contain further complexities? How are we to get any security that there at last we have reached the end of all analysis and have found the perfectly simple unit? It is, of course, easy enough to construct a (grammatically) simple sentence, and by means of three of these to construct a syllogism possessing the same kind of formal or superficial simplicity; but how can this prevent an opponent from finding complexity in the facts which are thus referred to? If there were some infallible authority to tell us in doubtful cases which arguments—which facts—are simple and which are not, then all would be well. But, unfortunately, no such authority exists or can exist. There is common sense? Yes, but whose common sense—yours or your opponent's? For each party to a dispute claims to be using common sense; that is to say, to be using the kind of common sense which is worth considering. Even the quibbler makes his appeal to the more everyday kinds of common sense; even the philosopher claims that the deepest and truest common sense can (with attention and trouble) follow his reasoning. That is why the hostile or impatient appeal, "Your own common sense should tell you," can never be trusted to succeed. Your opponent thinks he is already using his own common sense, and to him it probably seems of a better quality than yours. So that if he sees any argument as complex your insistence on its simplicity will merely make him think you dense.

§ 3. *Chain Arguments.*

It is time now to look at some kinds of inference which are obviously complex, so as to see exactly why it is that they cannot usefully be treated as syllogisms when we want to find fault with them. One of the best known forms of complexity is where a conclusion is based on a chain of circumstantial evidence—as, for instance, in our speculations about the way in which something has been caused, or about what may be expected to follow as its effects. This is one of the commonest of all kinds of inference, and is used both in the most elaborate scientific researches and in our casual everyday attempts to understand the facts around us. If we want examples that are concise and sharply pointed, and easy to follow, we can get them best from detective stories. Such stories may not represent very truly the proceedings of the professional detective in real life, but they do very truly represent the only available method of reasoning from a set of facts observed, whether the reasoning be good or bad. There are always a number of details noted, each of which is seen or believed to have a meaning of its own, a meaning either relevant or irrelevant to the main enquiry; and the problem is to pick out the relevant ones and to weave their separate meaning into a consistent whole.

Take, for instance, Edgar Allan Poe's account of the methods of the detective in the case of the *Rue Morgue.* In the story we are first given a newspaper account of the facts, and then the detective goes to examine for himself the scene of the murder. Next day he explains to a friend exactly what he saw, why he noticed it, and what conclusion he draws. Naturally his observations were throughout guided by his previous general knowledge of causes and effects, his knowledge of the way things happen by rule. Fact after fact was noted as adding something to his first bare conclusion that the victims had not killed themselves, until at last he was able to reconstruct the series of actual events successfully. It is just the same wherever we argue from a number of facts to their explanation. Each separate detail that is noticed is viewed as having some meaning, and the resulting judgment is formed by putting together the several parts.

It is easy to see why, in dealing with a chain of evidence like that in a detective story, no one would dream of searching for a single major premiss, or principle, on which the whole depends. You can, no doubt, always frame such a principle in words, but you gain nothing by doing so; you only repeat the total known facts of the case in an unwieldy form. For instance, it would be possible to state in words the general rule that "All cases presenting exactly the details found in the *Rue Morgue* are cases where a double murder has been committed on two helpless women by a large fulvous ourang-outang of the Bornese species, escaped from a sailor belonging to a Maltese vessel." But we cannot imagine any one putting forward such a major premiss seriously; partly because of the mere unwieldiness of the statement required to specify the details, but also and chiefly because no one supposes there has ever been, or ever will be, any other case presenting all these peculiar features. No one doubts that every actual occurrence has some features peculiar to itself. It is plainly absurd, therefore, to talk of a general rule which exactly fits a whole actual occurrence, leaving nothing out. The more closely we regard an actual occurrence as composed of many details the more we are forced to see it as *sui generis*, as an individual case made what it is by the unique conjunction of all its parts, however small. Hence the objector, in dealing with a chain of evidence, naturally wastes no time in searching for a single comprehensive principle to attack. What he does is to break up the total enquiry into manageable fragments viewed as separate arguments, each with its own principle—which is generally some accepted rule about causes and effects—and to search among these fragments for any that can be taken as simple and shown to be faulty. A chain argument, like any other chain, depends on the strength of its weakest link. The conclusion is the sum of the meaning of a number of details, and if any important details are left out of account, or if the meaning of any one of them is wrongly read, the conclusion stands in need of correction and may be as false as any conclusion ever is. One little flaw in a matter of detail may upset the most promising chain of evidence—may even directly reverse the conclusion drawn from it. As Captain Nares found, when he tried to put together the facts presented by the wreck on Midway Island, "any one can make half a dozen theories for sixty or seventy per cent of it; but when they're made there's always a fathom of slack hanging out of the other end."

We see, then, that the way to attack an inference from a set of facts is not by treating the whole argument as a syllogism and finding its major premiss faulty, but by enquiring into the details, and seeing whether each has been given its due weight and no more. The inference as a whole has to be analysed into smaller fragments of inference before we can bring effective criticism to bear upon it.

§ 4. *The Argument from Analogy.*

Obvious chains of evidence, however, such as those which are set out in the detective stories, are not the only kind of argument in which complexity may be discovered. Any argument where the major premiss is vaguely conceived may turn out to be full of complexities. For as it stands it is spoilt by a gap in its cogency, a gap in the evidence, through which error may have crept in; and the filling in of the gap involves, as we shall see, a reference to further details.

Of reasoning by means of a major premiss which is vaguely conceived, arguments by analogy are a conspicuous example. In this form of inference we compare two cases and pronounce them "essentially the same." Case S—the case in dispute—is regarded as essentially the same as the other case, S̶, and therefore it is supposed that something which we know of the latter we can safely infer of the former. Thus the fact that the postal service is best managed by Government induces some people to believe the same of the railway service.

What we do, whenever we argue by analogy from case S̶ to case S, is to *class these two cases* *together*, though only for a special and limited purpose. We are, or profess to be, sufficiently aware of all the differences that exist between, say, the postal service and the railway service, but we claim that for the one purpose of satisfactory management in the public interest these differences are negligible. When we say that any two things are essentially the same we *never* mean that they are precisely similar in every respect; but that, *though different*, their difference is unimportant as compared with their resemblance.

Compare for a moment this temporary classing together of things with the more permanent classifications to which our regular class-names (or "general names") correspond. What grammar calls a "common noun," or what logic calls a class-name or general name—say, a name like "spade"—is applicable to a number of different things which resemble each other in some respects while they differ in others; spades differ, for instance, in size and shape. But no one would say that the classing of these different objects together was done merely for a temporary purpose. Indeed, children and even many grown-up people would probably be much surprised to hear that it is done for a purpose at all. To the unreflective it seems that classes *exist*, and that since they exist they have had to be named; that our ancestors kindly named them for us—after the example set by Adam in the Garden of Eden. And when the naming process is once established the name of the thing seems to belong to it of right; a dodo *is* a dodo, a horse *is* a horse, and there are people who would ridicule the question why it should be called one. Like the cricketer who was asked why a certain kind of ball should be called a "yorker," they would answer that they fail to see what else you could call it. In several places further on[1] we shall have to discuss the naming process more fully, but meanwhile we have only to notice that at any rate the classing of things together for the purpose of an argument by analogy makes no pretence to be more than a temporary and special way of regarding them. Analogy always has about it a flavour of the unusual, an air of fancy or imagination; while if you call a horse a horse, or a spade a spade, you seem to be stating the most unvarnished kind of fact. The distinction between a plain fact and a coloured or varnished fact is, as we shall see further on,[2] only a rough and convenient one, and is liable to lose all its value in a dispute—in the same way and for the same reason as the distinction between a simple and a complex fact. But at present we are only concerned to notice exactly what is the likeness and the difference between arguing that since S belongs to the class X it may be inferred to have (like the rest of that class) the quality Y, and arguing that since S essentially resembles **S** it may be inferred to have (like **S**) the quality Y. What we have found is, on the one hand, that the members of any class are not exactly alike, but only "essentially alike," and therefore analogous; and on the other hand that the recognition of analogy is really classification, only of a less permanent kind. In the one kind of argument we happen to have an accepted class-name, X, by means of which a general rule (All X are Y) is expressible, while in the other we have something of the same kind, only less definite, permanent, and readily available. If a class-name covering S and **S** were now to be invented and accepted, then the argument would no longer be called an argument by analogy, but would be as like a simple syllogism as any argument ever is.

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[1] See especially pp. 105-8, and §§ 17, 18, 36, 37.

[2] § 34.

If, for example, we go back in thought to the time before the name "yorker" was used in the language of cricket, the likeness between any two balls so pitched was there for every one to see, only there happened to be no recognised name for them. But exactly the same inference could have been drawn as to the way such a ball should be played, because the right of inference always depends on the facts of the case and not on the name. At that earlier period, however, it would have been an inference from analogy. Smith received a ball of about that length, played it in such and such a way, and was bowled; here is another ball essentially the same, and I will therefore play it differently. On the other hand, when the name is once in use the same argument becomes a syllogism: "This is a yorker, and yorkers never ought to be played so and so."

Or take the class-name "boycotting." Now that we have the name we can bring any new case under it, and so infer of the new case whatever is true of this class of action generally. Boycotting in general, we say, is a means of producing such and such an effect, and therefore it will be so here and now. But before the name was invented there was no recognised class into which a new case could be put. The most that was then possible was to remember the special method adopted for coercing Captain Boycott, and to argue by analogy that if the same treatment were to be employed again the same result would follow.

These instances, however, and especially the last of them, fail to illustrate well the vagueness from which most arguments by analogy suffer. So simple is the process now known as boycotting that the invention of a class-name for it required no poetic fancy, and met with no opposition. It is rather where a class would be difficult to conceive clearly that we get the most characteristic specimens of the argument by analogy—the argument that requires some insight and imagination in order to pick out from a confused heap of resemblances and differences those that have special importance. The comparing of present events with past events in history is a fertile field for this kind of operation, and we can all remember plenty of examples of it.

For instance, during the recent Boer War various analogies were appealed to by various people as helping to throw light on the situation. It was compared to the operations of America in the Philippines, to the Armenian massacres, to the American Civil War, and even to the high-handed action of Spain in the Netherlands in the time of Elizabeth. Our action in South Africa was supposed (by different people) to be analogous to those and other historical precedents, and the analogies were used to support the various judgments passed by these various people on the rights of the war and its probable outcome. It is easy to see that in all these comparisons there is some likeness and also some difference, and that the justice of the analogy depends upon the relevance of the likeness and the difference. If the likeness is relatively important the analogy is strong, while if it is unimportant the analogy is weak.

It appears, then, that what constitutes an argument by analogy as contrasted with a syllogism is the absence of any major premiss which can be expressed in the form of a definite general rule. And if we notice the way in which an argument which openly[1] rests on an analogy is attacked by an objector, we see that the point of the objection always lies in the complaint that the ground or principle of the argument is so vaguely conceived that a merely superficial and "striking" resemblance has been mistakenly thought important. This is the same as complaining that the arguer does not see clearly what the *essence* of the matter is; or, in other words, does not see clearly what the general notion is under which the case in question comes. It is notorious that arguments by analogy are among the most disputable of all arguments, and the reason is that as a rule both parties trust rather to what they "feel in their bones" than to what they can clearly express. The one sees the cases compared as essentially the same, while the other sees them as essentially different; and the "essence" is so vaguely conceived by one or both parties that a long and gradual process of putting in details, and so of arriving at increased definiteness, is necessary before any real advance can be made. But dependence on details is precisely the quality in which a chain argument differs from a simple syllogism; so that the process of discussing the force of an analogy has the effect of changing what seemed at first to be a simple argument into a chain.

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[1] The objection to the open use of analogy is a different thing from the complaint that an analogy has been surreptitiously used as argument —as where, for instance, the proverb, "Let sleeping dogs lie," is used in a case where "Grasp your nettle" would be a more appropriate simile. The latter form of objection will be noticed under the head of *Begging the question*, in § 31.

§ 5. *The Thin End of the Wedge.*

An equally common form of argument, closely allied to the argument by analogy, and equally vague, is that which is popularly known as the objection to a thin end of a wedge. We must not do this or that, it is often said, because if we did we should be logically bound to do something else which is plainly absurd or wrong. If we once begin to take a certain course there is no knowing where we shall be able to stop with any show of consistency; there would be no reason for stopping anywhere in particular, and we should be led on, step by step, into action or opinions that we all agree to call undesirable or untrue. For instance, it is a common form of objection to proposed Bills in Parliament, to particular interpretations of existing Acts, to claims put forward by individuals, and—as every schoolboy knows—to slight infringements of discipline, even when such infringements seem in themselves perfectly harmless. The authority says "No. If I allowed one boy to do this on one occasion I should have to let other boys do it on other occasions when it would not be so harmless." And it is not only the schoolmaster or the parent or the legislator who thus "draws the line" for us, but we all do it for ourselves to some extent. We all dislike creating dangerous or inconvenient precedents when we happen to recognise them as such. Behind particular cases we constantly seek for wider principles which they illustrate and support; behind apparently harmless decisions or actions we often imagine extensions, of a less innocent kind, that may in future be required in the name of mere consistency, or that may seem justified because they are "practically the same" as what we have done before without any harm.

How common this mode of reasoning is may be seen by referring to any newspaper. It is the stock argument of those who, rightly or wrongly, object to an innovation. For instance, a proposal is made that the feeding of school-children shall be charged upon the rates, and a leader writer says:—

> We have already made a serious inroad upon personal responsibility and personal independence by relieving

parents of the duty of educating their children. That is now used as an argument for relieving them of the duty of feeding their children. When we have done that, the argument will be stronger than ever for relieving them of the duty of clothing their children . . . . From that it is an easy step to paying for their proper housing. . . . The proposed measure would go far to sap the remaining independence of the existing parent; but what are we to expect from the present children when they in turn become parents? The habit of looking to the State for their maintenance would be ingrained in them; everything we now give would be to them a matter of course; and they would infallibly make new demands of their own, which in turn would be to their children the irreducible minimum.

Or take a passage from a political speech:—

I was most determinedly opposed to any such proposals. I told the Prime Minister without hesitation that if the Cabinet adopted that policy I should leave the Government—and why? It was not so much the shilling a quarter duty—that was not very large—but I knew perfectly well that, if that policy were adopted, and this shilling were to be given to Canada, it was only the commencement of a much larger scheme. You could not stop at the shilling and you could not stop at Canada. You would have to consider the whole of the colonies, and to give preference to all the colonies. You would have to tax not only bread, but meat and all kinds of dairy produce.

Or again, a case comes before the Court, in which a plaintiff contends that a firm of tourist agents, having supplied tickets for a tour, are liable for an accident that occurred to a carriage hired by them to convey the party. Expressly, there is only the one particular case in view, but the defendant's reply is that the principle implied in this supposed liability cannot be justified. If such a principle were to be accepted, they contend it would lead to absurdities; for example, is it supposed that tourist agents are obliged to insure the safety of the Campanile Tower in Venice?

Another legal case was that of the bicyclist who refused to pay the toll charged for carriages on a certain bridge. The local authorities claimed that a bicycle, like a carriage, has wheels, and carries its rider; therefore, they said, it is a carriage and ought to pay the toll. The other side objected that if a bicycle is for these reasons to be called a carriage, then on the same principle a roller skate must also be called a carriage. Is a man on roller skates to pay the toll charged for a couple of four wheeled carriages?

Or again, a leading article comments upon a debate in Parliament—a debate not directly about a principle, but about a particular case of alleged injustice. "The contention," says the article, "comes simply to this—that when an officer is recalled or superseded by his military superiors, he is entitled not only to discuss in public his own fitness and their alleged injustice, but to call upon them for the publication of whatever documents he may choose to demand. . . . If that doctrine is to be applied all round there is an end of military discipline altogether." . . .

"If that doctrine is to be applied all round"; "if that argument is to be taken seriously"; "if you will only consider what your proposal strictly involves,"—such phrases as these are familiar to us all. They illustrate our habitual tendency, already noticed, to seek for general rules behind particular cases; but they also show how vaguely conceived a rule may be without affecting our readiness to accept it as a ground of inference. For it must not be forgotten that in all disputes of this kind there are two parties opposed to each other, and that what divides them is precisely their lack of agreement on the question what principle is really involved. Those who see a proposal as a thin end of a wedge always see the principle as a wider, more inclusive one, than those who make the proposal; and what gives them freedom so to see it is merely the fact that it remains indefinite. The situation between the parties is thus the same as between those who maintain and those who dispute an analogy. The objector claims that two cases widely apart on a scale are analogous, while the proposer of the innovation claims that there is "all the difference" (*i.e.* essential difference) between them. The question, which party is right, can only be settled by going into the details of resemblance and difference and estimating their relative importance, and thus introducing complications into the argument.

§ 6. *Concisely expressed Arguments.*

In the complex arguments noticed above, it was comparatively easy to see their dependence on close observation and intelligent selection of details. In detective enquiries, in arguments by analogy, and in attempts to judge the character or effect of a wedge from its thin end, we all recognise (or can easily be shown) that the problem turns upon the proper estimation of a number of facts and their meaning when put together. But we must not suppose that this method of criticising the value of an inference is required only where the argument is obviously complex. We must also expect to meet with many arguments which at first seem far less complex than they really are, and which therefore deserve to be treated as complex, in spite of some temptation to treat them as simple syllogisms. The more widely we look at cases of actual controversy or doubt, the more we are struck by the fact that disputes commonly begin by looking simple, and gradually lose this deceptive appearance as the dispute goes on. Disputes, remember, normally do go on; they are not sudden occurrences finished off-hand, like shooting or missing a rabbit. Rather, it is in the nature of disputed arguments to have their hidden complexities gradually disclosed in the course of the dispute. We have seen[1] that excessive simplicity is what we chiefly look for in other people's arguments when we do not agree with their conclusions; and in the first statement of an argument excessive simplicity is often easy to find. There are many things that combine to make us state our arguments scantily when they are first put forward. We naturally try to prove our point with a minimum of argument; we do not wish to be pedantic, to drag in first principles too much; we politely assume that our audience can read between the lines of a concise expression; we are perhaps ourselves a little uncertain what details we mean to lay most stress upon, or a little doubtful whether our "facts" may not lose some force if more of their details are specified; or again, we may have forgotten many of the details; or again, we may grudge the time or trouble required to marshal them. Be the reason what it may, the fact remains that our statement of reasons is often at first scanty enough to give rise to shallow objections, and that then we are generally under temptation to show that there is more in our argument than the shallow objector supposes. We are thus led by degrees to disclose complexities in an argument which seemed at first not to contain them; and it is through the answers made to surface objections that the deeper complexities of an inference usually appear. Thus, however fragmentary an argument may be, or however clearly it may be seen as a mere link in a chain, there is nothing to prevent its consisting, on its own account, of further complexities without assignable limit.

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[1] Page 26.

And when once we recognise that even shallow objections may have a respectable function to perform in developing a dispute, some use may be found for the old doctrine about the need of a major premiss. It is now seen to be misleading only when the assumption is made that an argument must stand or fall by its first expression. Evidently there can be no harm in objecting tentatively that such and such a wide generalisation seems on the face of the argument to be used as its principle, and so to be taken as true. We thereby challenge the arguer to make any qualifications or limitations of this wide rule which he thinks would render it safe against attack while yet leaving it wide enough for its particular purpose.

In this way, even in an argument seen to be complex, the initial stage of criticism may follow the lead given by the old logic; we may use the conception of a major premiss required to connect fact and conclusion, while yet we avoid the pedantry of supposing that unless the argument is on its face a perfect syllogism there is nothing more to be said for it. We are then asking what exactly the argument is, instead of being content to judge it superficially and to put the worst possible construction upon it.

Almost any argument that is evidently inconclusive as first stated would serve as an example of the kind of occasion on which the attack may begin by the tentative suggestion of an absurd major premiss. Such arguments as "He must be a respectable man; he keeps a gig," or "a dissolution of the Government is imminent; the paper said so this morning," are only rather well-marked cases of incomplete expression. Obviously not every man who keeps a gig is respectable, and obviously it would never do to believe everything we see in the papers. In such cases, and also in less extreme ones, the objection that these major premisses seem to be implied in the arguments need never profess to be conclusive, but may be used as a way of asking what narrower and less absurd rule the reasoner has in view.

Now the reasoner, thus challenged, may yield to the request in two different ways. He may produce his narrower rule and let the truth of that become the immediate question at issue; for instance, he might deny the imputation of believing everything he sees in the papers, and yet try to justify a belief in certain special kinds of statement when they are made in a leading article in the *Times*. But a far more usual way of meeting the challenge is vaguely to indicate the narrower rule without expressly stating it. In arguments which are doubtful enough to be disputed most people feel instinctively that it is both easier and safer to avoid committing themselves to universal rules—wiser to leave the grounds of the argument vaguely indicated rather than clearly expressed. This can always be done by adding further details to the fact or facts adduced as evidence. S, you point out, is not only X but AX; and if that is not sufficient for proof you can go on adding other qualifying details as long as you can find any that seem relevant. The addition of each detail is itself a way of narrowing the implied rule,[1] but there is never any need to claim that we have come to the end of this process and have arrived at a single rule that will cover the case. And this method of adding details of evidence that were omitted in the first statement of an argument is clearly independent of the question whether the argument is a large or a small one, a whole in itself or a part of a larger whole. The smallest detail to which a meaning is given may be seen as composed of smaller details still, and its meaning as dependent on them. On the largest scale and on the smallest scale alike the addition of details of evidence has the effect of making an argument less simple. In this way a concisely stated argument, under the stress of dispute, gradually loses its first appearance of simplicity and becomes in effect a chain.

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[1] Thus if our argument is that S is both X and A, and is therefore Y, the rule implied is only that all the X's which are also A are Y—only a part of the whole class X.

§ 7. *Summary of the Chapter.*

One chief result of this chapter may appear at first sight merely negative in character. We have seen that the old logical analysis of the structure of argument—the view of inference as depending on a major premiss—is not of much direct use in dealing with disputed inferences, even where the facts are admitted true and where the conclusion is clearly and steadily conceived. It is, and professes to be, applicable only to inference from "simple" facts; and we have seen that it is easy and natural to imagine facts to be simple when they are not so, and that it is precisely in disputed questions that this error most occurs. That other people take an excessively simple view of some fact, or that they accuse us of doing so, is one of our commonest everyday vexations.

And, expressing this difficulty in a general form, we may say that the question which facts (and therefore which arguments) are simple is unanswerable unless we are content with either a superficial answer or an answer by agreement. It is like asking which men are perfect saints and heroes, or which statements are perfectly true. Certainly there are men whom we can all agree to call saints and heroes, and statements which we can all agree to call true; and in the same way there are facts which we can all agree to treat as simple. But this is clearly an artificial and precarious simplicity, existing on sufferance only, and residing rather in our (possibly mistaken) way of viewing the facts than in the facts themselves. On the other hand, we know that any recognisable fact, as such, is composed of details, and that by choosing to look at its component parts we can see it as complex. Thus we are only able to take any fact as simple till either our own further enquiries or an opponent's objections bring its complexities into prominence.

But out of this apparently negative result some considerations with a positive value for the application of logic have already in this chapter begun to emerge. We have seen, for instance, that the old doctrine about the need of a major premiss admits of being used as a first step towards the discovery (by an objector) of what an intended argument really is or amounts to—a request for further definiteness, further elaboration of detail. So far, the only indefiniteness we have expressly noticed is that which belongs to the ground or principle of an argument. We have glanced at some of the leading modes of such indefiniteness, and have suggested two causes as chiefly concerned in producing it: (1) the fact that arguments are seldom as fully stated at first as they might be; and (2) the disinclination which most people feel to committing themselves—especially when challenged to do so—to wide generalisations, so long as something less ambitious and less risky seems sufficient.

Hence what we find for the most part in disputes is that the objector is continually trying to force or lead his opponent into a greater definiteness of assertion. He is continually trying to get him to commit himself to some statement that can be taken hold of and shown to be mistaken. This is a familiar situation where a keen and clear-headed objector attacks an assertion based on slipshod reasoning. We have all looked on at, or taken part in, the heckling of some pretentious talker who has not the sense to see the weakness of his position. But the view we have here been taking of the nature of argument is a much more comprehensive one, and applies to all disputed arguments indifferently, without any reference to the moral or intellectual qualities of the two parties concerned. The objector's business, as objector, is to press for definiteness, and his opponent's reluctance to commit himself has often a nobler origin than shiftiness. We have seen, for instance, how natural and proper it is that an argument should at first be rather sketchily presented; we have seen that sometimes anything like a single compact principle is impossible; and we shall presently see also that strictly universal rules are so rare that most of our actual arguments, good and bad, have to do without them. Thus a reluctance towards claiming definiteness of principle has often much to be said for it. A subtle reasoner, struggling with real difficulties of insight, naturally will not enter the snare which is set in his sight by the formal logician.

He will not enter the snare, but if he thinks his own case strong he will have no objection to explaining it further. And thus the line of all progress in disputes is towards definiteness—

definiteness of issue, definiteness in conception of the facts appealed to, and of the precise meaning of those facts. We see this most plainly, not in controversies, but in our internal debates, where doubt gradually gives way to more or less of certainty. The process here is plainly one of increasing definiteness, just as where a dimly seen shape in the dark or in the distance gradually acquires intelligible details on a nearer view. And midway between hot-headed controversies and our internal efforts to understand comes that considerable class of cases where the dispute is between persons equally anxious to find the truth. If it cannot be said that scientific disputes are entirely of this nature, yet generally speaking they exhibit more of the direct truth-seeking quality than any other class of disputes: in politics, for instance, there are always axes to grind; in religion there are vague emotions to cherish; in philosophy there is a special tendency to exalt words above facts. It is in scientific enquiries that we find, generally speaking, the best examples of intelligent and honest dispute. And the more a dispute approaches this type, the more truly we can say of it that its whole progress is towards greater definiteness of insight into facts and their meaning.

Progress, then, in disputation is made by unravelling hidden complexities rather than by treating arguments as simple syllogisms. No doubt the latter course is often tempting in controversy, especially as it seems at first sight to be exactly the course which "logic" authorises. But it is not an effective method, since—unless our opponent happens to accept it as relevant—it puts us in the position of refusing to hear from his own mouth what his argument really is; it enables him to show that we are not doing his argument justice, but are trying to catch him by means of paltry "logic-chopping"—a practice which is no longer respected by sensible men. Merely for the purpose of bringing the complexities of an argument to light, the suggestion of an absurd major premiss may serve as an initial step; but instead of ending the dispute it should rather be said to begin it. Such an opening remark is no more than a challenge, an enquiry. It asks, in effect, how the intended argument differs from the obviously absurd one suggested; and its purpose is to tempt the arguer to make his intended meaning clearer—either by narrowing the principle or by adding further details to his statement of the facts. Thus we leave him free not only to fill out his too concise expressions or to correct their looseness, but also to improve his argument itself on second thoughts if he can. The stronger our own case is, the more rope we can allow to our opponents.

It must not be supposed, however, that to admit the paramount need of enquiring into details is the same as to say that general rules have no function to perform in argument, or the same as to sweep away the notion of a major premiss altogether. All that we have admitted is that the required simplicity of a disputed argument is difficult to arrive at except by stopping our ears to explanations that are volunteered. The enquiry into the details is itself a search for the contributory arguments which may by agreement be taken as simple. For details can only be relevant through their meaning, and the meaning of any detail is nothing else than the general rule or rules assumed to lie behind it. Thus the whole purpose of the enquiry into details is to dig down to any *rules* the truth of which can become the point at issue between the parties. We never doubt that rules are what give facts their evidentiary value, but in enquiring more definitely into the facts and their composition we also enquire more definitely what rules are needed to make the argument good. The objector's aim always is to find some fact to which a wrong meaning has been given either through mere neglect of details in it or through a downright misinterpretation of them — that is to say, a belief in the trustworthiness of some over-simple rule.

And, in practice, though the final settlement of a dispute may be out of the reach of the parties, issue is often joined about the truth of some rule; and incidentally progress is often thereby made. When both parties are sincere, both are on the look-out for such interim points of issue; and persistent difficulty in finding them generally points to a wish on the part of one disputant to blur the trail.

CHAPTER III

THE LIKELIHOOD OF EXCEPTIONS

§ 8. *Imperfect Rules.*

REMEMBERING always that disputes tend to become protracted in proportion to their difficulty, their two-sidedness, and the candour with which they are carried on, we shall find it convenient to think of them as passing through various stages of progress, of which the first is the search for some general rule to attack. It must not indeed be supposed that disputes always go through the same stages, or in the same order; nor is there always a clear division between the stages, as between stations on a railway. A dispute that seems to have got near the end of its course may at any time be found sliding back to a less advanced condition, and on the other hand the disputing parties may and constantly do leave out some of the earlier stages, and arrive at or near the real turning point at once. The notion of stages, therefore, is here used for convenience merely, as roughly representing the usual procedure in disputes where progress is gradual. The stages in other kinds of progress are often known to be liable to the same criticism—as, for instance, in the progress of civilisation.

The first stage, then, is the search for some general rule the truth of which may serve as a point at issue; and, as we have seen, complexities are in this first stage usually brought to light. We have now to see that the same sort of experience is repeated again in the second stage — where a disputable general rule has been discovered in the argument—except in those rare and controversially unimportant cases where the rule makes a serious claim to be both perfectly definite and true without exception; as, for instance, in Euclid's arguments. There is a continuing need of searching for further detail and for greater definiteness as soon as the disputing parties admit any departure from strict universality and unmistakable meaning in the rule attacked.

Of course we might here, if we pleased, leave all these incompletely general rules out of account—following the custom of the older logic. This would be an easier course, but it would also greatly hamper our power of dealing with disputes as we actually find them carried on. We could still contemplate the beauties of a geometrical argument, and we could still play with the crisp and artificial syllogisms of the logic text-books; but when Smith expresses a partly true theory without much discrimination, or shows perversity in dwelling too much on one side of a case, or takes some fact for a little more (or less) than it is worth, we should find it almost impossible to get in touch with him. What usually happens is that the rule or rules that underlie his reasoning do not profess to be completely definite and true without exception, but merely to be as trustworthy rules as a reasonable man need expect to get. Not only do we all constantly use such rules, but we are all prepared to justify our use of them on practical grounds. Though there are plenty of rules which we habitually take as perfectly true, and use without suspicion of their defects, we are liable at any time to have our confidence in them rudely shaken; in fact, this is part of the very function of dispute, the very use of an opponent—to force us into the admission that some major premiss of ours is a departure from the logical ideal. It would be difficult to find an instance of a real dispute in which both parties restricted themselves to that prison-house of the formal logician where nothing short of a strictly universal rule, free from all ambiguity, is recognised as a ground of inference. Our thoughts, therefore, as well as our talk, tend always to leave their anchorage in undeniable truth, and to "launch out into the glad, free, boundless realm of the things we are not quite certain about." The exercise of thought would be rare indeed if our reasoning powers had to lie dormant till they could be employed on perfectly axiomatic subject matter. And they would be superfluous. But we need not press this point further, since it is enough to recognise, as a matter of well-known everyday fact, that perfectly definite rules without exceptions constitute only a small proportion of the rules on which our reasonings are based, and especially those more interesting reasonings which allow of dispute or which call for possible correction.

We have already had occasion to refer briefly to one typical class of imperfect rules—rules which are expressed in the outward form of definite generalisations apparently claiming to be strictly true, and yet are in fact content to make a smaller claim; rules which confessedly require to be applied with intelligence, and not to be taken quite literally. Proverbs, we noticed, are a well-known instance of such rules; but the real difficulty is to find any rules which are free from all taint of this vagueness, at least outside the limited region of the purely abstract sciences, such as mathematics or formal logic. What is left vague in the case of most of the rules we use is the range of their application when the rule is taken literally. And our knowledge of the proper application of a rule is, in other words, our knowledge of its exceptions. When we use a proverb, or any other confessedly not quite universal rule, we assume that "every one knows" approximately what its exceptions are; when we use, for instance, the maxim, "It is never too late to mend," we do not mean to deny that *some* wrong actions can never in this world be put right, some situations, or illnesses, or breakages, can never be mended. So that in applying this or any other concise epigrammatic rule to a particular case we tacitly assume that the case in question is *not* one of the exceptions. And consequently, if our argument is disputed, the gist of the objection lies in the claim that this tacit assumption is without foundation in fact.

Sometimes, indeed, the tacit assumption takes a still looser form, and merely amounts to a belief that the exceptions to the rule are so few, and therefore so unimportant, that they may be left out of sight by all sensible or practical people. We shall presently see that this is a shallow and weak defence of the use of an imperfect rule in argument, but still it is common enough to deserve some notice. Even in its least vague form it amounts to no more than a careful numerical estimate of the exceptions as compared with the cases that follow the rule. The arguer who relies on such a method is putting a natural but a misleading interpretation on the excellent maxim that probability rather than perfect certainty is the guide of life. He takes it as meaning that exceptions have to be counted like voters in order to judge of their importance, and that an unimportant exception is merely one that is rare. The objector will have no difficulty in showing that any such maxim, so interpreted, is irrelevant or false.

§ 9. *Numerical Probabilities.*

The objector will naturally begin by explaining that what he is trying to arrive at is the value of the rule, not for inferences in general, but for the particular inference here drawn in reliance on it. The rule is here applied, he reminds you, to a particular case, and therefore the assumption is made that this particular case is not one of the exceptions. What steps, then, have been taken to make sure of the truth of that assumption? "You claim," he says, in effect, "that the rule is as nearly true as required, and that no practical person can take its few exceptions into account; I wonder how you arrive at that view of it, and how you distinguish between the miss that is as good as a mile—which kind of defect it is surely practical to notice—and the wholly unimportant departures from perfect accuracy which we should all agree with you in neglecting."

Now, if the defender has really done more than trust to luck, he has the opportunity of explaining what he has done, and so of raising a new set of questions about the value of his reasons for thinking this case no exception. Otherwise he has only the doctrine of Probabilities to fall back upon, and if his appeal is to this the objector can easily meet him there.

The statement that rules are more or less nearly true in proportion to the *number* of exceptions they admit of may be taken either as a definition or as a statement of fact. It may mean no more than a proposal to define the greater or less approach to truth in a rule by the number of exceptions to it. And since a definition is never more than a postulate[1] this is clearly within the defender's power. "But, then," the objector remarks, "we have got no further towards understanding under what conditions a rule is more and less *trustworthy.* You talk of practical certainty, but can anything be more unpractical than a kind of truth which is not the same as trustworthiness—a kind of truth which may effectually mislead? It is the trustworthiness of your rule which I am disputing, not its right to the title of 'very nearly true' in a specially defined sense of those words. The trustworthiness of a rule is a question of fact, and no question of fact can be solved by a mere definition."

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[1] See p. 261.

Thus, if the doctrine of Probabilities is to be relevant, it must be taken to mean that rules are more and less *trustworthy* in proportion to the number of exceptions they admit of. And we all know that in dealing with things on a large scale this assumption can be turned to good account. Statistics—such as those about the proportion of railway accidents to safe journeys—allow us to draw satisfactory inferences, as long as we are content with inferences about large numbers of travellers or journeys, as the insurance companies are. It is when we have one particular case in view that the method becomes delusive. In the same way the proprietors of gaming tables draw safe inferences by numerical probabilities, though the individual gambler has never any approach to certainty.[1] So far as his next throw is concerned—which is what his particular stake refers to—all that has happened before makes no difference. The result of that throw depends on its own causes, and no amount of care in watching previous throws can tell him these with the required completeness.

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[1] In some conceivable forms of gambling this would be not quite true. Thus, if all the red cards were gone from a pack we should know that the next would be black. However, such opportunities of betting on a certainty are not, I believe, actually met with. The gambler with a system is in a different case, for he takes comparatively large numbers of throws into account, though the tables still keep an advantage.

Stated in general terms, the weakness of the method of Probabilities (when applied to a single case) consists in its assumption that all the units of which it takes account are exactly alike. Each throw of the dice, for instance, or each tossing of the coin, is taken as only numerically distinguishable from all the others. But think what is involved in this monstrous assumption. It contradicts all that we know of the facts of Nature. In Nature individual cases never are exactly alike, however much we may try to make them so artificially. In a lottery or a raffle—when the drawing is conducted fairly—it is, no doubt, usual to assume that the chances are equal. But not because the assumption is true; only because we happen to have no other and better means of foresight. Each ticket as it is whirled round in the urn, or stirred about in the hat, is really subject to a different set of conditions from that of all the others; and if by a miracle we could know exactly what the conditions are for each ticket we could predict the winning number with certainty. It is only our unavoidable ignorance which compels us to treat them as all precisely alike. Similarly with dice; each of the six sides of a die has to be reckoned just as likely to turn up as any other, and therefore we say it is five chances to one against any specified side turning up. But, after all, the turn of the die is decided, as every one knows,[1] by mechanical facts and conditions; and if we are able to trace these it could be predicted with certainty. If the figure 5 is, for mechanical reasons, actually in process of being caused to turn up, how can the figure 6 be considered to have the same chance of doing so? The "chance" is only another name for our ignorance. Or, suppose some one substitutes, unknown to us, a die which has been loaded so that the chances of the 6 turning up are increased or diminished. In our ignorance we should still take all the numbers as equally likely; so that we should be counting them as precisely similar units when—even considered as mere chances—they are not so. It is again our ignorance of the facts of the case that compels us to trust this highly misleading estimate.

Here, then, even on the most favourable kind of occasion for applying the method of numerical chances to a particular case, we see that the necessary assumption that all the units are alike is a mere artifice in default of other knowledge which would be all-important if only it could be got. But much more plainly is this so in the great majority of our inferences, where the units considered are more plainly unlike each other than lottery tickets or the throws of a die. Think of the grotesque assumptions that would be involved in arguing by statistics about individual men merely on the ground that they are "men." Even the insurance companies try to get nearer to the facts than this. They recognise that some kinds of men have "better lives" than others, that some trades or occupations are more dangerous than others; and causal knowledge always plays a part in suggesting the formation of these classes of different risk. But after all has been done in this way that can be done some uncertainty about the individual case necessarily remains. As long as a man is treated merely as a member of any class at all, his individual difference may upset our best rule-of-thumb calculations about him.

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[1] Those who believe that evil spirits, or other non-material agencies, may take a hand in these operations seem to be no better off than the rest of us as regards having precise means of foresight.

On the whole, then, it is clear that the statistical way of estimating chances is, for the individual case, an exceedingly slender reed to trust to. Lotteries and gaming tables are, when fairly conducted, purposely devised to make the units they deal with as nearly alike as possible; yet even here the boundless variety of the real world upsets our over simple calculations. The individual gambler's prospect is always, in common parlance, a toss-up—solely because he cannot trace all the causes that are actually concerned. And outside these artificial conditions the argument from mere statistical probability is still more evidently a poor resort of ignorance, a method we all gladly discard as soon as any hint of the actual causes presents itself. Consider, for instance, the chances of a railway accident. The insurance companies will give you long odds against your being killed on a particular journey. For their wider purposes all journeys may be treated as alike. But your particular journey you may happen to know (and to care) more about. In certain circumstances—say, if a heavy fog comes on—you may reasonably fail to share the insurance company's easy view of the risk. In forming a careful conclusion about a particular case no one with any sense will use the method of Probabilities if he has an opportunity of getting behind it and understanding the causes at work in the special case.

And there is another way in which we may see how unsafe it is to assume that a possibility need not be reckoned with because the occurrence is rare. What are called turning points in the life of any one of us—the opportunities we seize or miss, the infections we run into, the events that alter our whole career—have always something of the unexpected in them. It is notorious that the long arm of coincidence in real events would often be thought absurd if used in a novel. In a novel you may perhaps allow the villain to be killed in a railway accident, but you can hardly allow him to be stunned while riding a bicycle by a potato dropped accidentally from a height by a passing crow. And yet this has actually happened,[1] and the moral is, not that we should bicycle in steel helmets, nor even that we should refuse in general to act on a balance of merely numerical probabilities, but only that argument so grounded rests on a needlessly weak foundation. In action we must take many chances if we care to get anything done, but in an argument we are never compelled to claim as true a conclusion that is weakly founded. We can always either admit that our conclusion is only a case of trusting to luck, or else take the trouble required to make it stronger.

We see, then, that the unimportance of exceptions cannot be even plausibly proved by an appeal to mere brute probability—probability of the statistical kind, which depends upon the violent assumption that every particular case which possesses a certain general name (*e.g.* a railway journey) is exactly like every other to which that general name will apply. The statistical method fails because it neglects some of the relevant facts that belong to the particular case in question; and therefore the remedy must consist in taking such details into account.

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[1] At least it was reported in the papers, and there is no reason to doubt its having happened. If the potato had fallen on a beetle, or on a blade of grass, in a field, it would have been neither more nor less marvellous—only we should probably not have heard of it.

§ 10. *The use of Causal Knowledge.*

As soon as we have finally discarded the notion that trusting to luck is a satisfactory way of applying a vague or imperfect rule to a particular case, and have seen that what is wanted is some good reason to think that the case is not one of the unspecified exceptions, the course of argument begins to run more smoothly, though its end may still be far away. For now it becomes evident that our best hope of knowing whether the case follows the rule or not is through our knowledge of causes and effects. We are inevitably led to regard the case as composed of such and such details which are likely to have such and such an effect; and from the supposed effects of all the details considered we judge the question whether the case is likely to follow the rule or to be an exception. This is the method we use, even without reflection, in all our reasonings which are carried on by the help of imperfect rules; and our most careful reflection does not enable us to discover any other and better method.

We saw, in the instances referred to above, how a vague or imperfect rule, useful for large numbers of cases, sinks into unimportance in the presence of causal knowledge about the particular case. When a boat springs a leak, no merely general rule about the normal buoyancy of boats will comfort us, and in presence of an earthquake the rule that houses in general are firm structures is promptly dismissed from our minds. But these are only striking examples of a habit which pervades all our thoughts. Everywhere a rule which holds good in the absence of causal knowledge about a particular case is superseded at once in the presence of such knowledge. For the time, and so long as the particular case alone is in view, the general rule loses every particle of the importance or relevance it may previously have seemed to possess. Thus it is that in all protracted disputes, sooner or later, we find that what the question really turns upon is a difference of view about causes and effects. One party thinks a certain detail relevant, or important, which his opponent thinks is not so; one sees (or thinks he sees) that the case is likely to be an exception to the rule, while the other fails to see this, and therefore (blindly or rightly) takes it as following the rule. Each party, therefore, in effect accuses the other of superficiality—claims that a detail has been overlooked, or seen out of its due proportion, that its influence has been ignored or exaggerated, or in some way misunderstood. How can the question be settled between them? That problem remains to be discussed in Chapter IV.

§ 11. *Rules as Applied.*

A short summary of the position will now again be useful. This second stage in the course of an argument, though the disputing parties often pass quickly through it, is worth some special attention because we are thereby helped to see a truth which is of far-reaching importance, namely, that the question whether an imperfect rule is trustworthy cannot, in a dispute, be separated from the question whether it is trustworthy in the particular case which the dispute refers to. This does not mean that we can never ask and answer the question whether an imperfect rule is on the whole a good one, nor even that the answer is devoid of every kind of value, but that such a question and its answer are entirely without relevance in a dispute about a conclusion between two parties who have already agreed that the rule (supposed to justify the conclusion) is either not quite definite or not quite universally true. The objector may admit to the full the general importance and value that is claimed for the rule, while yet he maintains that his opponent's use of it is risky or mistaken. The whole point of his contention is that, however trustworthy the rule may be in other circumstances, it does not hold good in the peculiar circumstances of the case in question. It is admitted between the disputing parties that the case of X to which the rule is here applied is something more than X in general. It is not, for instance, merely *a* railway journey, *a* man, and so on, but contains a multitude of individual peculiarities of its own; and the question is as to the effect any of these peculiar details may have on the rule—"If X, then Y" as here applied. Let us suppose that the parties agree that the case in question is AX,[1] and disagree about the effect of the detail A. The objector[2] claims that A has a restraining effect on the production of Y, so that its presence here makes the particular application of the rule untrustworthy. The assertor, on the other hand, maintains either that there is no such detail present, or that its effect is different from what the objector supposes.

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[1] See note on p. 49.

[2] It is here again convenient to speak of the "objector," but in most respects the distinction between the parties, as assertor and objector, has at this stage no longer any importance. As regards both assertiveness and critical attitude, either name is now equally applicable to each party. Each has a positive view of his own to assert and each claims to find the opposite view superficial; each thinks that his opponent either leaves out of sight some important element in the case or else misreads its true meaning.

This point is not in itself a difficult one to see, but is only made difficult by our natural tendency to simplify our problems by attacking them piecemeal and then to forget how artificial this simplification of them is. The problem being whether the evidence for a certain conclusion is satisfactory, we analyse the notion of "evidence" into two *distinct* elements, fact and rule, in order to examine the truth of them separately. There is not a word to be said against this operation so long as we remember that the distinction is made by ourselves, for our own purposes, and has no other existence. But we often fail to do so. We think it sufficient to ask *which* of the two premisses is false, as if the two premisses existed independently of each other. It is easy to forget that our "fact" and our "rule" are abstractions from an argument which exists as an undivided whole, and that in taking either of them apart from its context we cut off a part of what really belongs to it. The fact as used in the argument is the fact taken as coming under this particular rule, and the rule as used in the argument is the rule interpreted as covering this particular fact in all its details. Therefore, to ask whether the fact is true in some sense which does not bring it under this rule, or to ask whether the rule is true in some sense in which it does not include precisely this fact, are irrelevant and often misleading enquiries.

The best way to see the point is to take an example in which it is perfectly clear; but since this kind of example would be a case of *obviously* absurd reasoning it is almost hopeless to look for an unmistakable one among real disputes, and we shall have to invent one. Let us then imagine a rule to the effect that "guns are dangerous things," and a fact that "this is a gun" combined into an argument. But the particular gun, we will also imagine, happens to be unloaded; that is one of the details belonging to it. It is clear that the fact is not true in the sense in which the rule is true, or (what comes to the same thing) that the rule is not true in the sense in which it covers this particular fact. What relevance can there be, then, in recognising the truth of either the fact or the rule in *other* senses? The entire force of the argument depends on the senses being the same.

We are not perhaps tempted in real life to use this notion of a gun being a gun, "and there an end on't," but we are tempted a thousand times a day to commit the same fallacy in subtler ways.

We are tempted, that is, to be satisfied with the recognition that a rule is on the whole a good rule, and that a fact taken broadly is true, without enquiring closely whether when such fact and rule are combined in the act of inference their value remains the same. When we do this we forget that it is their combination (in an argument) which has started our enquiry whether they are true. The character they may possess outside that enquiry is strictly irrelevant to it.

The old technical name for this fallacious mode of argument is "a syllogism with an ambiguous middle term," and as we shall often find it convenient for the sake of brevity to use this name some explanation of the nature of a "middle term" may here be required. As the name itself indicates, the conception had its origin, not in any clear understanding of the syllogism as the application of rules to cases, but in the more formal or verbal view of its structure, the view which sees the syllogism as made up of three "propositions" (major premiss, minor premiss, and conclusion), each with two different "terms" (subject and predicate). One of the rules required by this conception for distinguishing between "valid" and "invalid" syllogisms—*i.e.* between real and sham ones—was that in the three "propositions"[1] taken together there must be three different terms, and no more; and as the proposition which is called the conclusion contains two of these, it follows that the third term must occur once in each of the premisses. This term—the one that occurs in both premisses, but not in the conclusion—acts as a link connecting the premisses with the conclusion; and it seems to have been called the "middle" term partly for this reason, but also because in one of the earliest forms in which syllogisms were written[1] it was given the middle position.

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[1] The word "proposition" is the source of innumerable confusions

Though the position of a term in a statement, or in a set of statements, is now recognised as accidental, or as having at most rhetorical rather than logical importance, the notion of a verbal link required to connect the statement of a rule with the statement that a case S comes under that rule retains all the value it ever had. The middle term of any given syllogism may now be identified as the predicate term of that syllogism's minor premiss; or more simply, as the description given of S whenever such description is supposed to

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in logic. It is supposed to mean an *assertion*, but it usually blurs the highly important distinction between an assertion and the *sentence* in which an assertion is expressed. For the defects of this technicality see also my book *The Use of Words in Reasoning*, p. 345.

[1] S is M, M is P; therefore S is P. Or, in the symbols used above, S is X, X is Y; therefore S is Y.

justify our bringing the case (or group of cases) S under a rule. If I describe Smith as a socialist, and go on to argue that therefore he is a wise (or unwise) man, the term "socialist" is the middle term of the argument. And as a corollary from this, it follows that every descriptive term gets whatever *meaning* it has by its function of becoming a middle term in some one or more arguments.

We shall have to discuss the nature of ambiguity more fully in Chapter V. and elsewhere, but for the present we need do no more than note that *irrelevance* of a fact and a rule to each other is always the charge which has to be made good by the person who claims that the conclusiveness of an argument is spoilt by an ambiguity in its middle term. The charge amounts to no less than saying that, so far, there is no argument stated. Rules apart from some particular application of them, and facts apart from some particular rule or rules under which they are supposed to come, are not elements of any particular argument at all. They are like any other unused possibilities; for example, like an idle bank-balance sufficient for some purpose, but not yet confronted with a particular purpose for which it may fail to be sufficient. What an actual argument does is to put to a definite use some fact and some rule, thus making all other possible uses of them for the time irrelevant.

In our next chapter, then, we will assume that both parties have got so far as to understand that the question is not whether the disputed rule is in some sense true, nor even whether it is generally useful; but that the whole difficulty is to discover whether the rule is trustworthy as applied in the particular argument. Thus the question now again becomes an enquiry into details and their meaning, only it has become clearer that the meaning of a detail consists in whatever knowledge we can acquire of its causes and effects. Gradually the issue has been narrowed down until there is nothing left except a difference of opinion about the influence of a certain detail in making some fact a probable exception to an otherwise useful rule. Thus the dispute has now become an attempt on the part of each disputer to show that he understands better than his opponent the causes at work in the particular case. The point at issue is the precise effect of the detail A.

CHAPTER IV

CAUSAL ENQUIRIES

§ 12. *The Reference to Experiment.*

IN disputes which have any vitality, or two-sidedness,[1] it is naturally no use to tell your opponent that he does not understand how this or that detail operates unless you are prepared to show him his errors with some exactness. And the only way to do this is by means of facts or experiments which he will admit to be crucial. Till that is done, he imagines, rightly or wrongly, that the ignorance is yours. Neither party, therefore, will long continue vaguely assuming superior knowledge; the need is felt of bringing the conflicting opinions to a decisive test. One of the parties, accordingly, tries to produce a case (or many cases) of observed sequence of events which, he claims, can only be understood in the light of his own view of the causes, or at least which shows some fatal defect in his opponent's view of them. Then, if the opponent still remains unconvinced, it is for him in his turn to explain why the proposed test is not satisfactory. At this stage, therefore, there is always one party who claims that some actual observed sequence of facts—for instance, the result of a careful experiment—is a crucial test of the effect of A, while the other party claims that, owing to some looseness in the observation, or some clumsiness in the conditions of the experiment, the supposed test is indecisive. The parties are thus again led on from vagueness towards definiteness. Beginning with a general distrust of each other's knowledge of the effect of the detail A, they are gradually able more definitely to accuse each other of having misunderstood what actually took place in one or more particular cases in which the detail A was present and apparently produced a certain effect C.

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[1] Throughout this book we are leaving out of account any disputes that may arise between people who are unmistakably on greatly different levels of intelligence—as, for instance, between nurse and child, or between expert and tiro. In real disputes the attempt to evade criticism by means of a claim of general mental superiority can seldom or never in modern times be impressive.

Now the ordinary "inductive logic" of the text-books tells us quite clearly and accurately, in the abstract, what is required as a perfect experimental test—a test by means of what Mill called the "Method of Difference." Any two people disputing as to the precise effect of the detail A, in a case of X, are to settle their differences by observing or experimenting with A in other situations. In order to do this, they must isolate A (if possible), introduce it into a known set of circumstances, and then see what change occurs. Thus they arrive (as nearly as they can) at A's proper and peculiar effect. For if A on any one occasion did *unmistakably* produce a certain effect, that effect and no other must follow from it always. Otherwise the fundamental axiom of causation would be falsified. We must pin our faith to the law that the same cause always produces the same effect, or else we have no guide at all in our enquiries into the course of Nature.

And probably we shall all agree that inductive logic here gives a sufficiently simple and intelligible account of what happens in any observations and experiments which *seem to the observer conclusive.* The detail A—let us say, a dose of prussic acid—is introduced into a healthy dog, which thereupon promptly dies; no one doubts the poisonous effects of the dose. If we keep only undisputed cases in view this account of the process of experimenting may even be called axiomatic. In any experiment which we do regard as crucial, we do seem to isolate the detail A, and to know completely the circumstances into which we introduce it, and hence to arrive at A's proper effect. Indeed, if we never thought this process satisfactory it is difficult to see how any knowledge of the ways of Nature could have been gained or could now be increased. Fortunately, no one on all occasions raises all the doubts that are theoretically possible. And yet, with our present purpose in view, it is necessary to say something about them. For in any dispute which has reached this stage, the raising of doubts as to the crucial character of an experiment is precisely what each of the parties has to do against the other in order to maintain his own position. Dispute at this stage consists entirely of explaining away your opponent's apparently triumphant experimental proofs.

A question of some interest here is what exactly is meant by "explaining away" an experiment. It is one of the things that we are all constantly doing, or trying to do, though the experiments on which we mostly have to practise the art are clumsy ones as compared with those to which the name experiment[1] more properly belongs—such as the work carried on in a scientific laboratory. But the clumsiness or ingenuity of an experiment is a relative term; there is no such thing as clumsiness apart from an implied standard. To explain away an experiment or an observation, at any level of laxity or care, is always the same thing—it is always to show *relative* clumsiness in it, to show it as clumsier than it ought to have been. The explanation thus involves the substitution of a better theory to account for what has been observed, whether such better theory is itself capable of being improved or not. No more than this can be done against the loosest observation, and no less must be done against any experiment, however careful, if we are to explain it away.

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[1] In this chapter the usual distinction between experiment and "mere observation" is not dwelt upon, since the difference is only one of relative clumsiness. Experiment is more controlled observation; observation is less controlled experiment. As we shall see, the control is never perfect, nor (in strictness) is it ever entirely absent, since in all observation *selection* is at work.

But there is also an intermediate position between accepting an experiment as crucial and completely explaining it away. It often happens that though we have no better theory to put in the place of the one we distrust, still we are able to show definite and particular points of weakness in it, and so to give a reason for reserving our opinion. The dispute, however, is not advanced at all except so far as such points are definitely indicated; for if you entirely fail to explain what your opponent's error is, you reduce your criticism to a mere flat contradiction of his theory, without any reasons given; you might as well be content to shout, "I don't believe a word of it, and slam the door.

Nor, again, would there be anything gained by mere insistence on the good old axiom that all men are fallible, and your opponent among the number. For this is plainly a consideration that cuts both ways and affects both parties to the dispute—unless, of course, you claim to be yourself an exception to the rule, and can persuade your opponent to accept you at this valuation. But here we get outside the region of disputation altogether. Within that region no advance is made except through definite suggestions as to the source of an opponent's error. Thus, in controversy, at least, the natural limit of the value of sceptical doubts is always clear enough. Doubts which make no attempt to help the discussion forward are, for the time, idle doubts. The raising of them is one of the many possible forms of irrelevance.

As an example of idle doubts we may take the well-known verbal difficulties which have been from time to time raised by certain philosophers about the possibility of causation altogether. Apart from the question whether such difficulties have any philosophical value,[1] they are at any rate irrelevant as between two disputants at the stage of argument here considered. For what each of the disputants claims is that he understands better than his opponent what the causes and effects in the given observed event actually were. Both, that is, assume that in the piece of fact referred to *something* caused *something*, and for both the only problem is "What caused what?"

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[1] Their only importance may, for instance, consist in showing up the defects of language and of thought which is formed in the mould of language. That it is equally easy to raise the same kind of doubt as to the validity or even the meaning of such doubts, and to reduce them to absurdity, has been well and amusingly shown by Captain H. V. Knox, in *Mind* (n.s. No. 54, p. 210). When once we begin

Now the difference between suggesting a better causal explanation than your opponent's, and merely finding some fault with his explanation, is a smaller and less important difference than perhaps it at first appears. Fault finding is better conceived, not as a merely negative position taken, but as a beginning made towards arriving at a satisfactory positive explanation. Select any two points,[1] A and C, in a process of change, and it is evident that the conceivable causal relations between them are very numerous. A and C may, for instance, be (what is called) totally disconnected—like my "star" and my good fortune; or again the connection between them may be through a long chain of conditions each of which is required to produce the effect.

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playing with words in entire freedom from questions of fact, there is no limit to the tangles we may create—whether solemnly or with humour.

[1] What are here, for convenience, called *points* are definite and particular changes that are noticed in a longer process of change. For "happening" (or "event") is only another word for change.

Or, instead of A being the cause and C the effect, their real positions may be reversed, as in the explanation that the high rent of a Bond Street shop is the cause of the high prices there obtaining. Or again, instead of A being the cause of C, C may be just managing to exist in spite of A, as where a particular kind of education, or of religious creed, is wrongly supposed to have produced a particular person's qualities. If, as we have here throughout admitted, every "causal instance"—every happening, every change, every concrete event—has its own peculiar intricacies, it follows that the *possible* relations between any antecedent A and any consequent C are beyond all counting. To set up one particular explanation—*e.g.* that A was the direct and immediate cause of C—as the true one involves the discarding of a countless number of other possible explanations; whereas the safer way is to begin by discarding this and that explanation as unsatisfactory, and to look for the true explanation among the residue — but with increasing definiteness as the enquiry proceeds. To find any particular fault, therefore, with a given causal theory, is to say in effect, "You have failed, so far, to *exclude* this or that possibility; what reasons have you for deciding against it?" It is an attempt to narrow down the field of enquiry step by step. This is the course usually followed by those who recognise how different and intricate all causal relations are, when for any purpose it becomes worth while to look closely into them. Hence, therefore, the importance of knowing as fully as possible the ways in which an experiment may appear convincing and yet be delusive.

§ 13. *The Weak Point in Experiments.*

It is customary in inductive logic to contrast "experiment" with "mere observation," on the ground that in the one process we carefully provide and control the conditions or circumstances, while in the other we take them as we find them more or less in the rough. Whatever value this distinction may have—beyond implying that the control of the circumstances is a thing to try for as far as possible—is (as noticed on p. 84 *n.*) a point that does not concern us here. In both processes we observe a set of facts; in both we try to select our facts intelligently; and in both our object is to find a causal explanation of them. Either word may therefore, if we choose, be used to indicate the whole scale of more or less controlled observation, or more or less arranged experimenting.

Nevertheless our present interest lies chiefly with that end of the scale where the observation is comparatively careful and intelligent. We are trying to keep in view two disputing parties who have arrived at our third stage of the course of an argument. We are assuming them to be of nearly equal knowledge, common sense, candour, and all the other qualities that help us to judge a fact correctly. So nearly equal are they that they have managed to carry their original difference of opinion far from its starting-point, and to tear away from it cloak after cloak of its earlier vagueness. Between them they have at last got near the real parting of the ways. Not only do they hold different views about the effect of a certain detail A, but the source of that difference has now been traced by them to a particular experiment in which one opponent holds, while the other disputes, that A is precisely what on that occasion produced a certain effect. What temptations to error, hitherto avoided, are at this stage liable to assail the one who regards the experiment as crucial? Let us imagine that the experiment or observation on which he relies is one which a reasonable, careful man might take as convincing; that, for instance, it is not a case of mere "*post hoc, ergo propter hoc*"—*e.g.* cock-crow, the cause of the sunrise—or of "induction by simple enumeration,"[1] or of blindly "putting the cart before the horse," or of confusing a hindrance with a cause. In short, he has done what a sensible man can do to interpret accurately the facts observed.

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[1] This name is usually connected, not so much with causal enquiries, as with the basing of a general rule of a simpler kind (an "empirical" rule) upon one or several cases observed, *e.g.* when an unfortunate

If we refer again to the condition of an ideal experiment, as quoted on pp. 82, 83, we see that the possible ways in which a careful observation or experiment may be delusive are all reducible to a single head. The one great difficulty is that of making sure that when we introduce A into a given set of circumstances nothing else comes in along with it, or directly after it, or is already there unknown to us. For if another detail, Z, has crept in thus insidiously, the experiment fails to show that it is A rather than Z to which the effect is due. Thus every misinterpreted observation or experiment resembles, in result, the child's experience with the watch, where it was not the obvious blowing (A) but the unnoticed pressure on the spring

week's experience convinces us that the Cornish climate is detestable, or when an undergraduate discovers that no woman can steer a boat. Still, it might equally well be applied to the case where, having seen A followed by C on one occasion, we conclude that it will necessarily be always so followed; and to that extent the two Latin phrases mean the same. They express, in an extreme and exaggerated form, the least careful kind of observation or experiment that is possible; an exaggerated form, because probably no one ever infers causation from *mere* sequence, or supports a rule by *total* inattention to its exceptions. Perhaps the nearest actual approach to *inductio per enumerationem simplicem* is the statistical way of regarding exceptions (noticed in § 9) where cases are simply counted as if they were all on a level.

(Z) which really produced the effect. And a disputer's task, wherever he undertakes to find fault with his opponent's experiments, is restricted to finding, if he can, the operative detail *Z* which ought to be substituted for the A of his opponent's theory. How is he to set about the search for this? That is to say, what general considerations are there which may help to direct his search?

§ 14. *The Influence of Previous Knowledge.*

To the question just asked the most general answer is that our success or failure in interpreting facts observed depends, whether we profess to be using the method of difference or not, upon the relevant knowledge, *preliminary and external to the experiment* itself, that we can bring to bear upon the question whether every possible *Z* has been excluded. The influence of this external knowledge is most easily seen in those cases where there is no serious pretence of being able to use the Method of Difference in all its strictness, and as these form the great majority of cases where dispute occurs they are here our chief concern. But it is also worth while to consider the extreme case of apparently satisfactory experiment, where to the best of our belief the Method of Difference itself has been employed.

It is an excellent thing to recognise the value of the Method of Difference, and to try to apply it wherever we can; but we must not, in our admiration for the ideal, slur over the fact that when we speak of applying it we cannot possibly mean more than applying it to the best of our (always incomplete) knowledge and power. For we never make any careful observations, still less do we arrange a careful experiment, except under the influence of what we know (or think we know) about the relative importance of the details concerned. All the apparatus—say, in a chemical or a physical laboratory—has had a history; it has been designed, detail by detail, over a long course of time, to enable us to ascertain more and more nearly the purity of "A," and all that can be known about the "circumstances" into which we put it. And when we consider that every few years improvements are made in some of these instruments—improvements by means of which former experiments are shown to have been comparatively clumsy—it is hardly possible to suppose that the long process has now come to an end. But even if it had, there is still another continuously growing and improving factor to reckon with—the other relevant knowledge which may come to us from unexpected sources. An example given on p. 100 will help to make both these points clear.

In general, then, we must admit that experiment, even at its best, cannot altogether escape the risk of a hidden Z—the reason being that there are defects inherent in the completest human knowledge at any period. So long as our insight into the intricacies of facts, and into the meaning of every detail in them, remains imperfect, can any reason be alleged for claiming ever to know beyond doubt that no Z existed unknown to us either in A or in the circumstances into which A was introduced? No such suggestion has, I believe, yet been soberly made by any one; and until it is made—and substantiated—reflection leads us to think it in the highest degree unlikely. To assert it would involve the assertion not only that in certain cases we have exhausted all the relevant knowledge of Nature that will ever be attainable, but that we can also somehow ascertain which these cases are. It would involve the assertion that in this or that direction all progress of knowledge has come to an end. For wherever we look back at the history of knowledge, what we find is that progress has (1) consisted in finding clumsiness of observation at the root of existing causal theories; and has (2) depended for its possibility on an advance of other knowledge more or less directly relevant. No other account of the growth of causal knowledge has ever been given than that it involves a finer and subtler insight into the complexities[1] of Nature than had hitherto been reached.

Such then are the reasons why we cannot get a perfect and final guarantee that in any particular case the ideal experimental method has been followed; we can get no further than a challenge to all the world to show, if they can, defects in the experimentation. Always our knowledge of the isolation of A, and of the complexity of the circumstances into which we introduce it, is liable to correction; and it is always along these lines that the critic of an experiment must look for means of explaining it away. The problem for him, as we said above, is to find, if he can, the operative detail Z, which ought to be substituted for the A of his opponent's theory.

Coming now to the less controlled kinds of careful enquiry—those which form the great majority—we shall find the influence of the existing state of knowledge still more easy to see. In most cases where we have to disentangle cause and effect it is admittedly beyond our power to devise an experiment which shall, even in appearance, reach the ideal. Outside the laboratory, things and events as we find them are usually so mixed together, and there is so much in them that is beyond the range of possible observation or of our present knowledge, that we can at most get some approximation to the isolation of A, and to the complete knowledge of the circumstances into which it is introduced. And some of the chief subsidiary methods by which we habitually make the best of this unfortunate state of things are to be found set out in every manual of inductive logic. Thus, when we see that we cannot find or make a case of A pure and simple, we may take a large number of cases of A in combination with other things, and trust that each of the details combined with it will in turn be absent on some occasion when the effect is produced. In certain cases we can make sufficiently sure in this way that each of a given number of details is inoperative. This method,[1] therefore, does help the enquiry forward a little, and the more exhaustively it is pursued the further we get towards finding the really efficient detail; at the least it is a way of partly allaying the suspicion that on a single occasion we were mistaken in thinking A the cause. And similarly with all the other experimental methods that have been distinguished by logicians or have been used by investigators. The only claim they make is that, in given circumstances, they are the best available ways of *approximating* to the Method of Difference. They are careful attempts to get as near as possible to the condition of an ideal experiment, but the certainty they give is admittedly not quite perfect.[1]

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[1] Insight into (what may be called) the "simplicities" of Nature is valueless in so far as it is based on ignorance of the complexities. It involves enough knowledge of the nature of the complexities to enable us to choose successfully between the important and the unimportant.

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[1] Mill's *Method of Agreement.*

Much of the general knowledge in the light of which we accept as sufficiently convincing these looser or quasi-experimental reasonings is so tacitly taken for granted, or so little criticised, that we are hardly aware of it; and we find, accordingly, that in the examples given in books on inductive logic little or nothing is expressly said about the part it plays. It is rather by observing cases of discovered error that we see how differences in general knowledge, and especially in that more relevant general knowledge which an expert possesses, render a Z visible to one person while it remains invisible to another. Consider, for instance, a number of people at a spiritualistic seance. We may imagine them disinterested enquirers if we like. They would prefer to have the lights turned on so as to use their eyes in discovering the possible Z. But since this is not allowed, they devise whatever other means they can for becoming aware of it. The touching of hands and feet, for example, is one method selected as helping to show that no member of the circle is playing tricks. That their selection of methods is often an insufficient one is shown by the numerous cases where deception has afterwards been discovered; and that expert knowledge helps us to make a better selection is shown by the cases where a skilled conjuror has discovered a *Z* that was hidden from men who were great and celebrated in other departments of study.

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[1] As Professor William James says: "Our minds grow in spots; and like grease spots the spots spread. But we let them spread as little as possible; we keep unaltered as much of our old knowledge, as many of our old prejudices and beliefs as we can. We patch and tinker more than we renew. The novelty soaks in; it stains the ancient mass; but it is also tinged by what absorbs it."

One caution about expert knowledge may here be in point. In a dispute its possession by one party is not always unmistakable. We probably all acknowledge that a conjuror understands sleight of hand better than any mere philosopher or professor of Physics, but this general acknowledgment by itself is not sufficient; he has to show us how the trick was done if we are to be convinced. As noticed already, a dispute is furthered only by appealing to the reason of the person to be convinced. It is always undeniable that a thing may be as asserted; but, in a dispute, what we want to know is whether it is so. Mere assertion remains mere assertion till some evidence is given of the fact.

§ 15. *Intermediate Steps.*

So far we have only arrived at a general account of the weak point in experiments — the bare possibility of a *Z* which is concealed somewhere among the facts observed. The question how we are in practice to set about looking for this hidden fact remains now to be considered.

We may assume that, other things equal, the more extreme the error is, the less difficulty there will be in finding it. And from this it follows that such errors as taking two "totally disconnected" facts for cause and effect, or taking a hindrance for a cause, or reversing the order of events and confusing cause with effect, do not well exemplify the difficulties of the search. The kind of case in which the difficulties are best shown is where the error is a comparatively small one; where the theory is roughly true, or sufficient for some purposes, but not for others. As we get higher up the scale of careful and successful enquiry the notion of simply substituting *Z* for A becomes less and less appropriate, and the process becomes rather that of discovering steps (Z) between A and the effect; or conditions (Z) that are needed along with A to produce the effect. The fault that is found tends thus to become a less sweeping one, and the better theory improves and supersedes the worse, rather than demolishes it—looks behind it or beyond it, looks more deeply into the facts.

For a fairly plain example we may take the enquiry as to the effect of marshes as a source of malarial fevers. Two centuries ago the existence of some causal connection between marshes and fever was widely recognised; but how the effect was produced no one knew; it was at first assumed—as a likely but unproved hypothesis—that the fetid gases which arise in a marsh were the source of the evil, and hence the fever was called "malarial." For a long time this theory was accepted. Then, little by little, as knowledge grew, the fuller circumstances came to light, and the steps by which the fevers are caused were more precisely traced. By the beginning of the present century the explanation reached was, not that the marshes are a wholly irrelevant circumstance, but that marshes are convenient places for mosquitoes to breed in, and that mosquitoes carry the disease from existing fever patients to other human beings. Under this explanation, then, it holds true that without the marshes (A) one chief means of spreading the disease would be absent; but it is also discovered that the marshes without the mosquitoes would be harmless, and even the mosquitoes also without ready-made fever patients to bite. Here, then, it is not simply A but ZA which is now regarded as the cause.[1]

This example may help us to see why it is that, however carefully an experiment be conducted, its apparent result is always liable to this kind of correction. For the source of the correction here was not only greater care in experimenting, but also partly an increase in other knowledge, and partly an increase in the mechanical aids to enquiry. It was through the improvements made in microscopes about the middle of the nineteenth century that certain details, unknown before, were discovered in the blood of fever patients, and it was through the researches of Pasteur, still later, that the meaning of these details was more fully understood.

The notion, then, of intermediate steps or conditions that are required, along with A, to produce the effect C is one chief help in finding errors in causal theories that are nearly but not quite true. But here again we must distinguish between a more and a less direct use of the notion, applicable respectively to simpler and subtler errors of the kind. In proportion as the error is a subtle one the search for intermediate steps between A and C tends to take on the character of a verbal enquiry—an enquiry as to what details precisely are included under the name A. It therefore has to be guarded against the charge of being "merely verbal," a charge which is often made in disputes, and which often engenders a good deal of unnecessary heat and confusion. The clear discrimination of verbal quibbling from the raising of really important doubts is one of the most pressing difficulties in the application of logic. In our next chapter we shall notice some of its leading features.

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[1] An interesting and much fuller account of these discoveries is given in an article by Dr. Ronald Ross in the *National Review* for November 1906. I do not know how far the enquiry may have moved on since that date, but any such changes of theory could only give additional illustration of the same process.

§ 16. *Some General Results.*

The two chief things that should now stand out clearly from the preceding chapter are: that in disputes which survive preliminary confusions and are forced to exhibit their real turning point, we arrive in the end at a question of fact; and that the apparent simplicity of any fact lies always open to challenge. We have seen how the process of discussion tends to bring to light differences of opinion about causes and effects, and how the further continuance of discussion tends to raise questions about the correctness or completeness of some apparently careful observation of particular facts. Since the intricacy and subtlety of facts is inexhaustible there is always room for the possibility that in our observation of them some important detail has been left out of sight; so that the business of the opponent of any causal theory which claims to account for a set of facts is to discover such omissions if he can. To explain away a piece of observed fact which seems to support your opponent's causal theory is to find clumsiness somewhere in his experiment—to find excessive simplicity in his conception of some fact.

We have seen also that the machinery of the old formal[1] logic is constitutionally prevented from taking into account, to this extent, the intricacy and complexity of facts. It assumes as a matter of course that the distinction between simple and complex facts can be applied without questioning the correctness of its application. In formal logic, the fact A is the fact A, and there is an end of the matter; whereas in real disputes the difficulty is to make sure that in calling a fact "A," in spite of all its intricacies, we are doing it neither more nor less than justice. And hence whatever value the old logical criticism of arguments may have is confined to those arguments which for some reason stop short of being threshed out as far as possible. Formal logic can tell us that an argument as it stands, or as it is now expressed, is incomplete; but what is thus condemned is only the form of words which happens to have been used. Such criticism of an argument gives us no right to refuse to listen to further explanations which admit the verbal defect and seek to amend it; indeed, they only provoke the arguer to show that the criticism is a shallow one resting upon a false assumption of simplicity in the facts. In modern arguments, it is true, the open appeal to formal logic as decisive is seldom met with—except where, as in some systems of Metaphysics, the possibility of verification by fact is expressly excluded; but even where this convenient exclusion is not made, the covert assumption that facts which are called simple are really simple still plays a large part in hindering progress towards definiteness of issue. Since the vitality or two-sidedness of disputes is mainly due to some lack of simplicity in the facts referred to, any logic which hopes to be of service in these cases must leave room for the finding of intricacy even in the most apparently simple fact. The question whether "A" is fairly described as A is thus the crux of all disputes which survive the earlier stages or initial confusions.

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[1] Throughout this book "formal" logic is identified not only with the logic which expressly calls itself formal, or "deductive," but with any logic which, like the ordinary "inductive" logic, is in fact more formal than it professes to be. Wherever actual application and its difficulties are ignored, there is formality of a harmful kind. See my book on *The Use of Words in Reasoning*, p. 309.

It is here that we begin to reach a more serious difficulty in the application of logic—the difficulty about the relation between questions of words and questions of fact. The contrast between these two kinds of question, or two ways of criticising an opponent's results, is better known than the connection between them; and so there is a temptation to suppose that to criticise a fact is one thing, while to raise questions of precise definition is another. We shall find, partly in the next chapter, but still more in Part II., that these operations are only different when the latter is wrongly conducted. As an introduction to that discussion it may be worth while to notice some further results of the hidden complexity of facts.

The universal source of weakness in a "fact" is that it cannot be a fact at all for us, until we recognise it as a particular kind of fact—say, A. At first sight this may seem no great hardship or drawback; if a fact is A, why should it not be called so, or "what else could we call it?" But, however satisfactory a description (or conception) of a fact may be where it is undisputed, every pair of disputants must reckon with the possibility that the description may be badly chosen, or even downright misleading. One of the disputants, that is, may think it satisfactory while the other finds fault with it. And the hardship or drawback of being unable to recognise a fact otherwise than by classifying it—by seeing it as a member of the class A—is that this process necessarily disregards some of the actual details of the fact, details which may be unexpectedly important. This follows from the admission that every individual case is in some respects different from all other members of any class or kind to which it belongs. To recognise a fact as A is to view it as *essentially resembling* the other members of the class A, in spite of all the differences between it and them; and it is here that we may at any time be mistaken. Our theory that this case essentially resembles the class of A's is constantly finding itself opposed to some one else's theory that it essentially differs from them: what I class as meat, my neighbour may class as poison; and, as we saw in § 4, disputes of this kind may be extremely difficult to settle. Thus it is not only what are commonly called arguments by analogy that are precarious arguments on account of the imaginative element in them, but all recognition of fact contains exactly the same source of possible error; it is, in the end, no more than recognition of an analogy between a given case and a group of other cases which happen to possess an accepted class-name. Whenever I recognise such and such a fact as essentially resembling the class of A's, my opponent may have better reason to hold that it essentially differs from the A's—

even in spite of a striking surface resemblance—and that it essentially belongs to another class, say Z. For example, what seems to me an attempted "bribe" may seem to some one else an offer due to kindness.

So far as this goes there is no difference between grosser and finer errors; all mistakes in our conception of a given fact may be brought under this general head. Misconception of fact, in all its possible forms, involves misdescription, and misdescription is only one form of false analogy. But when we ask how subtle errors of fact differ from gross ones, or what constitutes the chief temptation to error of fact, or the best excuse for it, we shall find in the notion of ambiguity the most general answer. In our next chapter, therefore, we must examine this notion. Meanwhile we need only recognise that whenever we observe a piece of causation in which A apparently produces a given effect, our "A" is never the whole of what is so described. It is never more than "something described as A"—something which we (rightly or wrongly) think is best so described. Thus our guarantee that we have interpreted an experiment correctly depends in part upon our certainty that the name A is the best description that could be given of something which we know to be (if it is A at all) A and *more*. In regarding it as A we have mentally divided the concrete thing or event into two parts—its "essence" and its "accidents" (or circumstances)—and have selected the A part of it as being its essence. Our certainty that we have made our selection rightly is always open to an opponent's challenge; for it would never do to lay down the rule that every fact is rightly conceived by everybody.

We all know this possibility of error, though commonly not to its full extent. We know, for instance, that it is possible in this way to describe as a "ghost" something that would be more accurately called a tombstone, or to imagine ourselves experimenting with a piece of some pure metal, while in fact it contains impurities. That what is called A may be wrongly called so, is a piece of knowledge which we may assume that everybody possesses, and that most people use many times a day. But what we do not all know, and what can only become clear to us through our knowledge of the nature of ambiguity, is that what is rightly called A may also be at the same time misleadingly called so. A fact may be "correctly" described as A, and yet A may be the most misleading possible description of it in a given context. Thus a thermos flask strictly *is* a hot-water bottle, and yet a person wanting a foot-warmer would find the description false.

This difficulty is one that, on the whole, affects "logic" even more than it affects common sense, since common sense thinks less about what it is saying and doing, and does not feel the same obligation to care for strict verbal consistency. In the reasonings of the "illogical" there is often an unconscious recognition of real defects of language which logic is restrained from admitting. In ordinary life we are often compelled to recognise that "circumstances alter cases," and that a thing can be strictly A and yet virtually not A, to an extent that formal logic does not and (on its principles) cannot officially recognise. For when it lays down the axiom that A is A,[1] or that a thing "is what it is," formal logic cannot be quite content to admit that in application this amounts only to wisdom after the event, or that its use only becomes safe after we no longer need it. When we already know that a thing is A we do not need to be told that if it is A, it is so. So that either the axiom must be admitted to be superfluous, or it must be so interpreted as to be applicable before the event—that is to say, while there is still some need to be assured that A is really the best description. It is this dimly felt need of interpreting the axiom so as to make it useful that leads formal logic to look unfavourably upon the common-sense recognition that A in one set of circumstances is not the same as A in another; with its corollary that A is not always A.

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[1] This axiom is known in logic as "The Law of Identity," and it seems to be sometimes conceived as a law that, though it is undeniable, is nevertheless capable of being violated, and even (by paradoxers) denied. The better view is that no violation or denial of it can have a meaning, and that no one need ever feel tempted to deny it, even if that were possible. Since any statement, however undeniably "true," may, if it is vague enough, be misleading, all that any one can wish to do, as against the Law of Identity, is to deny its value in application. See also pp. 142-5, 304.

What complicates the matter is that after one of these common-sense discoveries has been established, even in the teeth of logical opposition, logic can always turn round and innocently ask what all the fuss has been about, since, after all, the axiom remains inviolate. When, for example, it has become clear that an "extravagant expense" —say half one's income spent on a holiday—is not, in the circumstances, an extravagant expense, there is no longer any question of A being other than A, but only of A wrongly so-called. It is rather for its attempt to prevent questions from being raised than for any fault-finding after the answer has won general acceptance, that formal logic incurs censure; and, as we shall see in Part II., this is one of the most insidious ways of obstructing a discussion.

The study of ambiguity will put into our hands a useful weapon against this method of blocking questions. But in the meantime it is well to remember that there is never any need to deny the idle axiom that A is A; it may always be put aside as irrelevant or misleading in application. The chief thing here to remember is that the question "What is it?" takes precedence of the axiom that "It is what it is." For though we are often tempted to maintain that something "is what it is" without regard to the situation in which it happens to be, this assumption may at any time be found false and misleading. Whenever circumstances alter a case, the distinction between the case "in itself" and its circumstances (as distinct from it) disappears. The judgment, for instance, that a valuable trump card is in the circumstances the card to throw away rests upon the admission that the value of a card does not depend solely on the card's quality *per se*, but is complicated by the external circumstances of the moment.

CHAPTER V

AMBIGUITY, INDEFINITENESS, AND ERROR

§ 17. *Duplicity of Meaning.*

OUR general view of the nature of protracted disputation—that it is a process of arriving gradually at greater definiteness—suggests from the beginning that a considerable part must be played in fruitful disputes by the power of detecting and removing ambiguity. For, as every one knows, ambiguity and indefiniteness or vagueness have at any rate a good deal to do with each other. And in several passages above some reference has been made to the trouble caused by lack of definiteness in all thought and assertion. There was, for example, the passage (pp. 23, 24) where we had occasion to speak of general rules which are vague enough to be open to false applications. And further on (pp. 75-7) we connected this difficulty with that of "ambiguity in a middle term." The only use of rules is to be applied, and so to help us to conclusions. To apply any rule, therefore, is the same as to make it the major premiss of an argument, and any difference there may be between two interpretations of the rule takes effect in allowing different inferences to be drawn from it. For instance, almost any proverb admits of being interpreted (in different cases) so as to draw either a true or a false inference.

But in neither of these passages does the difference between ambiguity and mere indefiniteness come clearly into view. That and the connection between ambiguity and error are the chief points we must now discuss. Both of them are obscured by a number of careless popular notions about ambiguity—notions which are traceable to trouble-saving ways of thought in general, and in particular to the failure to distinguish (1) between important and unimportant vagueness, and (2) between vagueness which is generally unimportant and that which, though generally unimportant, has importance in regard to a particular occasion. Naturally these distinctions are troublesome to bear in mind, but to save ourselves trouble in an enquiry is not always the best way of getting forward towards the light.

Unfortunately, one cannot call attention to popular errors without setting up a minority's opinion against that of the majority; and the minority here is a small one, counting merely as voters are counted. But some excuse or apology may, I hope, be made by avoiding all dogmatism in the matter, and merely giving an account—based on a memory of my own early difficulties—of the progress from what now seems error to what now seems truth, showing how one is gradually led to regard as mistaken some of the views which at first one takes on faith partly from "logic" and partly from the commoner kinds of common sense. We cannot make sure of our ground here without going into some very elementary matters, and it is hoped that the reader who does not need the explanations will have patience with them for the sake of those who are less fortunate.

When you first make acquaintance with logic as taught, you find that ambiguity is a subject which is kept so far in the background as to be almost out of sight. Notice is indeed formally given that a syllogism with an ambiguous middle term is an invalid syllogism; and there is also a general recognition that the words with which all logical operations are performed must as a matter of course be non-ambiguous words; but of the nature of ambiguity, and especially of the difficulty of avoiding it, little or nothing is said. The rule against it is left to be construed by the beginner as a child may construe one of the Ten Commandments—say the rule against worshipping idols. There the rule is, and he is prepared to accept it cheerfully.

However, the mere technicality has to be explained, and then you find that the authorities divide all descriptive words into two kinds—"equivocal" (or ambiguous) and "univocal" (or non-ambiguous). The former, you are told, are those which have two or more meanings; that is how the class "ambiguous words" is defined, and the examples given are naturally the kind of words which lend themselves to the making of puns—words like *post*, or *pound*, or *note*. "Post," for instance, might refer to letters delivered, or to a stake driven into the ground, or to one of the daily papers. These are clearly different meanings for the same word, and the word therefore comes under the above definition; it is an "ambiguous word." On the other hand certain words—let us say *cow*, or *celery*, or *chalk*—have only one meaning, and therefore are "univocal" or non-ambiguous words.

But it need not take long to discover that this is an unsatisfactory account of the matter. It is a thin and insufficient account if ambiguity is to be reckoned as a serious defect, since this obvious kind of double meaning can seldom confuse anybody for more than a moment. Even in the heat of an election few speakers would try to obscure an issue by means of the clumsy and transparent ambiguities which belong to "equivocal words" of the recognised kind. And in sober debate or controversy a man who tried to use such words deceptively would merely ruin his reputation for common sense.

Besides, there are difficulties about applying the distinction correctly. You begin to meet with these difficulties as soon as you try to make anything like a list of the non-ambiguous words. For then you are at once brought up against the common practice of using words in metaphorical or quasi-metaphorical senses. You find that there are comparatively few words in daily use which are not frequently extended in this way, and it looks as if those that have so far escaped it have done so only by accident. Take any common word, like *chair* or *table*, *hand* or *foot*, or *head* or *cheek*. You can at once remember metaphorical senses in which they are frequently used. And indeed it is not easy to find many words which have quite escaped this fate. For all I know, chalk and celery have; but if any one tells me that cow, or pig, or donkey are doubtful cases, can I seriously contradict him?

Perhaps you will be inclined to say that metaphor is one thing and plain matter-of-fact expression another, and that in logic we do not take account of flowery language. But this only puts the difficulty into another form. The enquiring mind, anxious to get the matter really clear, now begins to ask uncomfortable questions about the distinction between metaphor and matter-of-fact expressions. Sometimes, but not always, you can be sure which is which. What you find is that while certain statements are plainly metaphorical, and certain others may pass as matter-of-fact, many are in a half and half condition. There is a tendency for statements which once were metaphorical to lose this character gradually, as we get more accustomed to them—which accounts for the statement that a certain Irish priest was "literally" the father of his congregation. Poetical expressions thus become prose, slang expressions proper English, and our convenient way of speaking of one thing in terms of another loses in time whatever far-fetched appearance it had at first. Every one who tries to write knows how uncertain in application is the rule against using mixed metaphors, and a little reflection shows that its uncertainty depends on the difficulty of saying whether an expression, once undoubtedly metaphorical, has or has not ceased to bear that character. It may be wrong to speak of a "far-fetched appearance," or again of "taking up arms against a sea of troubles"; but who would maintain that "holding a clear view" is a mixture of metaphors, or "handling a situation," or "casting our eyes on the ceiling?" From any page of a newspaper it is easy to pick out half-a-dozen phrases which, though strictly and literally metaphorical, are now reckoned plain English. And your enquiry, if you press it, will not stop there; you will find also that among the soberest double meanings that any words now admit of, the majority arose in just this way. The meaning of a word was gradually extended by the use of metaphor or analogy to take in new uses, and the old use and the new one remained side by side. Such words as *leaf*, or *letter*, or *libel*, are familiar examples.

Thus already the class of strictly univocal words keeps dwindling away the more carefully we try to find true examples of it. And, as this discovery proceeds, we begin to see where we are being led: to the view that if ambiguous words are simply words with two or more meanings there is no clear line to be drawn between words which are at all indefinite and words which are ambiguous. The indefiniteness of a word consists in nothing else than its equal applicability to *adjacent cases which nevertheless are different.* An indefinite word, therefore, since it fails (or purposely and rightly declines [1]) to discriminate between sorts which are nearly but not quite alike, is a word with two or more meanings. If that were accepted as the definition of an "ambiguous word," it would follow that every word, in so far as it is indefinite, is ambiguous.

The next step is to ask ourselves whether the convenient distinction between more and less vague words can be used to enable us to find examples of words which are not vague at all—words which with a clear conscience we can class as univocal. But if the reader has followed what was said in § 4 about the nature of classes and of descriptive words, he has already discovered that all descriptive words must, as such, be indefinite. For unless a word is a class-name it has no descriptive meaning, while if it is a class-name it necessarily ignores any sub-classes there may be within the class so named; and since all the members of any class differ from each other, there is no class that cannot have sub-classes within it, if we choose to make them. Any class can at any time be divided into those members that have and those that have not any given peculiarity that one or more of its members have. The possibility of sub-classes within any class follows from the fact that all the individual members have their own peculiarities; and from the possibility of sub-classes follows the indefiniteness of any class-name—and therefore of any descriptive name—used in stating a fact.

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[1] See § 18.

Thus, if an ambiguous word is to be defined as "a word with two or more meanings," all *descriptive* words are ambiguous; and so our class of "univocal" words has disappeared altogether. For we can hardly be content to say that only words which are not descriptive and which therefore have no meaning, escape ambiguity. If we did say this, what possible value would there be in the rule that the middle term of a syllogism must *not* be ambiguous? In this way, then, we are led step by step to the conclusion that if ambiguity is to be regarded as an avoidable defect at all, some other definition must be found for an "ambiguous" word than a word with two or more meanings. That description leads us wrong in one of two opposite ways: either we extend the notion to cover all indefinite words, with the result just noticed; or else we do not so extend it, but keep it carefully restricted to words (like "post") with meanings which are *obviously* different. In the latter case ambiguity ceases to be a defect which can be regarded as seriously interfering with thought or discussion, or as having practical importance of any kind. It then takes its place as a sort of literary defect in expression, occurring comparatively seldom, mostly due to carelessness, and on a different plane altogether from errors of fact. Thus misled, we naturally assume that the risk and harm of ambiguity are small matters, and that to take serious note of them —especially where they are not easily seen—is a tiresome habit either tricky or else pedantic, indulged in only by the sophistical rhetorician or the poor stickler for terminological exactitude. "Let us have facts, not words," is always a popular cry, and, like most popular cries, it illustrates a sound instinct easily led into wrong applications. We shall presently find that it is this popular trouble-saving view of the nature of ambiguity which chiefly leads to "wordiness" (or "verbalism"); and that the real slave to words, the despiser of facts, is he who in practice assumes that only those words are ambiguous for which you will find two or more meanings given in the dictionary.

§ 18. *Important and Unimportant Vagueness.*

When once we have seen that all descriptive words, by virtue of their descriptive quality, are indefinite, it becomes clear that if ambiguity is somehow connected with indefiniteness, and is also an avoidable fault, a distinction must be made between the indefiniteness which does and that which does not seriously interfere with the use of the word in reasoning. We are thus driven to recognise, in some form or other, a distinction between important and unimportant vagueness, and the question is, How can that distinction best be conceived and drawn?

The first and most natural method is to start from the familiar fact that some words are (what is called) *more* vague than others, and to suppose that the importance of a word's vagueness is related to the amount of vagueness which the word suffers from. We commonly speak of some words as better defined than others. Certain words—like "triangle," or "city"—admit apparently of exact definition, while the meaning of others—like "civilisation," or "truth"—is notoriously difficult to specify with exactness. And, in general, names of qualities are recognised as being in this sense vaguer than names of objects. Puzzling hybrid forms of virtue and vice, for instance, are more often met with than puzzling hybrid animals, or plants, or rocks; at any rate, the puzzles arising out of them are commoner, and more insistent, and better known.

But further reflection shows us some weak points in this way of distinguishing between ambiguity and mere harmless indefiniteness. In the first place, it is not at all clear how the "amount of vagueness" in a word is to be estimated, except as a matter of disputable (and unverifiable) opinion. You and I may happen to agree that "triangle" is a less vague word than "courage," but we should certainly not agree about every pair of words; and where we disagree, what satisfactory test is there that we could use? In the second place, a still more destructive objection has to be met. Let us pass over all doubts about the relative vagueness of this or that pair of words; let us suppose that such difficulties will never seriously arise, or let us assume that they arise so seldom as to be scarcely worth considering; still, the kind of distinction we thus arrive at is not exactly the one we were looking for. We were trying to get some means of marking off the words whose vagueness is important (and which are therefore "ambiguous words") from those whose vagueness is unimportant (and which are therefore not ambiguous words), and the most we have got is a distinction of degree, and a sort of right to neglect some cases of real ambiguity on the ground that the ambiguity in them is so small as to be not worth considering. Perhaps after all the plea that the ambiguity is a "very little one" is irrelevant. The illegitimacy of an ambiguous middle term in a syllogism may have nothing to do with the *size* of the ambiguity.

It is at this point in the enquiry, I think, that we at last begin to suspect that the whole search for a distinction between ambiguous *words* and others is illusory, and that ambiguity is a quality attaching not to words isolated from all context, but to words *as used in assertion and reasoning*; that the same word, whether its vagueness be regarded as great or small in amount, may be used ambiguously in one statement and unambiguously in another. But from the point we have now reached we may arrive at this view along several different paths.

One way is by considering what can really be meant by difference in the amount of vagueness which different words suffer from. The recognition that such differences exist is so common, and in its proper place so useful, that we are apt to accept it without troubling much about its precise meaning. Now if the notion of vagueness were restricted to that of the double or plural senses of a word which a dictionary gives, all we should have to do would be to count heads. *Hero* we might find to be a word with only one meaning; *herd*, a word with two meanings; *hind*, a word with three meanings; and so on. But with the recognition that descriptive words, as such, are vague, this method of counting loses all its relevance. When we have connected duplicity of meaning with the necessary failure of class-names to take sub-classes into account—the failure of "general" names to "specify"—we have admitted that the actual amount of duplicity in any class-name is incalculable, since it depends on the strictly innumerable points in which any two members of the wider class may differ. The judgment that one word is vaguer or less well defined than another must mean something else than that the various possible meanings of the one are more numerous than those of the other, if both are strictly innumerable. What then, in fact, does it mean?

There can be no doubt that what we count, however roughly, in judging that one word is more definite than another, are not the different dictionary-meanings of the words, but the different occasions on which the word's indefiniteness usually leads to confusion or error. One word is called vaguer than another because it *more often* becomes ambiguous; it more often *causes ambiguity in a statement.* For example, it is true that the word "triangle" does not specify whether a large triangle or a small one is meant, a black-on-white triangle or a white-on-black one, a well-drawn or a badly drawn triangle; and so on. But then in what we have to say about triangles these specifications seldom have any importance, and, if ever they had, the need of specification would be obvious. The specifications that do often matter—equilateral, isosceles, scalene—are, when needed, so obviously needed that they are never left out. When on the other hand the word "courage" fails to specify the variety—moral, brute, Dutch, or whatever it may be—the omission is much less obvious, and may be vital to the argument; it may allow us to take a statement in a sense in which it is false. Here we see, then, that our judgment that one word is vaguer than another always refers to occasions on which the word is *used* in statements. What the judgment has in view is not its degree of vagueness in the abstract, but simply the greater *risk of ambiguity* in the use of the words compared. And we see also that "occasions" are always statements—that you cannot have ambiguity, as contrasted with mere indefiniteness, except where a word is actually used.

§ 19. *General and Particular Importance of Vagueness.*

Since the general importance of a word's vagueness is nothing else than the sum of occasions on which its vagueness has particular importance, it is clear that when we recognise that a given word is vaguer than some other, we are taking a general view of the character of the two words—just as when we recognise that a sea voyage is, in general, less safe against accident than a railway journey. And, as we saw in § 9, these general judgments have some value. They are undeniably useful if our purpose is a broad one, like that of the insurance offices; and they have also a sort of better-than-nothing value where we have no means of estimating causally the risks of the particular case. Like the rule that evil communications corrupt good manners, the rule that abstract names corrupt good reasoning may deserve a place in a list of elementary maxims.

But it follows also that in any particular dispute the question whether a word is generally vague or not is either wholly irrelevant or, at most, a question with a very limited value, and as likely to create a false prejudice as to throw any light. The utmost value that the knowledge of a word's general vagueness can have is that of putting us on our guard at the beginning of an enquiry; it cannot pretend to stop an enquiry, nor decide whether the word's vagueness is here and now important; and in fact the knowledge that a word is *not* generally vague is one of the commonest reasons why we are slow to discover its actual ambiguity. By talking of important vagueness as if importance were something which is all of a piece, and can be simply weighed or measured, we tend to forget that neither vagueness nor any other quality can be important except relatively to some purpose or purposes in view, and that what is important for one purpose may be unimportant for another.

The chief thing to remember, then, about the distinction between vaguer and less vague words is that in a dispute in which a complaint is made that a word is vague, the word's general character for definiteness is not attacked and therefore need not be defended; its general good character in this respect is as irrelevant as any other agreeable fact about it—for example its beauty of sound, its dignity, or its "Mesopotamian" flavour. What is asked for is merely its meaning in a particular context. The claim made by the objector is that its vagueness is important for a particular purpose only, however adequate the word may be for any number of other purposes.

§ 20. *Ambiguity and Error in general.*

Even those who think of "ambiguous words" as words with two or more dictionary meanings, and who therefore regard a lapse into ambiguous language as a mere slip or literary defect, would admit that ambiguity may now and then be a source of error, though they could hardly regard it as really troublesome. They might see that through mistaking the meaning of statements it is possible to get a false notion of the facts that are stated. But any deeper connection between ambiguity and error could hardly come into their view. They are debarred from understanding how error can be the chief source of ambiguity, or how ambiguity and error arise hand in hand out of the nature of things and the nature of language (or thought) taken together. And hence they cannot see how the discovery of ambiguity forms one of the most valuable methods in correcting errors of fact, the need for it being greatest where the error is most subtle.

But with the recognition that ambiguity is important vagueness, and that vagueness consists in the absence of a needed distinction between subclasses of X, this disability is removed. For, however importance be estimated—whether it be general or particular importance that we have in view—it is clear that we cannot judge that a distinction is important except by reference to knowledge (real or fancied) of the facts of the case in question. To claim that the distinction between AX and BX, which the general name X obliterates, is important, necessarily involves a claim to know some relevant difference between these two sub-classes; for example, to know that one of them is Y while the other is not. Thus we never discover an ambiguity, as distinguished from an unimportant vagueness, except through a real or supposed knowledge of facts. And conversely, it is ignorance of facts which in all cases leads us to make statements of a kind that are open to the charge of ambiguity. Except by way of a trick—a possibility we are not just now considering—no one blurs a distinction which he believes to be important; ignorance is always the honest reasoner's excuse. The connection between error and ambiguity is therefore twofold. Not only may an unnoticed ambiguity lead to error, but an error of fact is the source of any ambiguous statement that is honestly put forward as true.

Perhaps it will make this point clearer if I here meet a possible objection half-way. What, it may be asked, is an unnoticed ambiguity? Is there, properly speaking, any such thing? Is it not of the essence of ambiguity that there shall be some one whom the ambiguous statement perplexes, some one who complains of its lack of clear meaning?

This difficulty is merely verbal, and may be met in the manner which is always appropriate to such difficulties—by yielding the point at once. Such a definition of the word "ambiguity" need not lead us into any wrong notions; it does not take us back to any of the careless views here criticised and discarded; and the only effect of it is to suggest the need of some other word to express "unnoticed ambiguity." It is precisely analogous to the possible verbal objection to such phrases as "invisible light" or "inaudible sound"; a purist in language might find the same kind of fault with those expressions, and it would be as little worth anybody's while to contradict him. By "invisible light" is meant "what would be light if some eye could see it"; and similarly an "unnoticed ambiguity" means "what would be an ambiguous statement if its defect were discovered." It is one of those concise expressions which are perhaps verbally indefensible, but which in practice are easily understood.

However, it is simpler to find another expression. It will suffice to use the phrase "a clumsy statement" to include any statement containing an ambiguity whether noticed or not. It would be in some ways better, perhaps, to specify the kind of clumsiness referred to—namely, the blurring of an important distinction; but as that would make our phrase clumsy in another sense, and as it also seems unnecessary after what has been here said, we may leave this qualification understood. The point is that through ignoring the importance of a distinction our statements get a certain incompleteness which—until the discovery of their defect makes them ambiguous—stands in the way of our getting the error of fact corrected.

The general connection between ignorance of fact and the clumsiness of statement which renders ambiguity possible may best be seen by means of an example. The phenomenon that we call a thunderstorm is one that must have been observed from the earliest times by countless millions of people inhabiting almost every corner of the earth. Yet to how many of these millions has the notion of two sorts of lightning—a rapid discharge and a comparatively slow discharge—occurred as important or even as possible? Lightning seems "instantaneous," and the notion of longer and shorter instantaneous processes is not one that the average man, even to-day, can easily accept as worth regarding. At any rate, let us say, it is not familiar to him and is one that he naturally overlooks. But Sir Oliver Lodge, in some of his experiments with lightning rods, discovered the importance of this subdivision of the class "flashes of lightning." One of the first things leading to the discovery was a doubt as to the truth of the received rule that copper lightning-rods are more effective than iron ones of the same shape and thickness—a rule explained on the ground that copper has less "resistance" than iron, and so is a "better conductor." The rule which up to then had been accepted was "The smaller the resistance, the better the conductor," and what first suggested a doubt of this rule were some cases[1] where an apparently excellent copper conductor had failed to act properly. The result of many experiments conducted by Professor Lodge with mimic lightning from Leyden jars was that the rate or pace of the discharge made an important difference—that iron is a "better conductor" for sudden and violent lightning, copper for the more ordinary kind where there is time for the discharge to prepare a path for itself. The path actually taken by the different kinds of lightning, he maintains, shows the same sort of difference as that between the path of a mountain stream and that of an avalanche.

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[1] In one case, for example, the flash had kept to the rod for about half-way down a tall church spire, and then blew out a circular ring of stones and so dropped the upper half of the spire neatly inside the lower half. What could be the explanation of this, on the supposition that a copper rod is a good conductor? The lightning had first jumped from a cloud through the air (which is a bad conductor—*i.e.* has a large resistance); it had then entered the copper rod and gone quietly along it for a certain number of yards; and, finally, for some unexplained reason, had left the rod and taken to the stones—which again are a "bad conductor." Why did it not at least go to the end of the easy copper path and then display its vigour by knocking holes in the ground?

There is some excuse, I think, for those who had previously not suspected that "lightning" was a word which could thus make statements ambiguous —*e.g.* the statement that copper is the best "lightning" conductor. And the example should help us to see how little security there is in our belief that any given descriptive word escapes the defect of clumsiness. Such security may always be upset by a discovery made to-morrow.

§ 21. "*Ambiguous Middle.*"

But we may go beyond the general reflection that error (or ignorance of facts) is just as much a cause of clumsy statements as clumsy statements are a cause of error. We shall understand the connection between ambiguity (or clumsy expression) and error still more clearly if we look first at the nature of a syllogism with an effectively ambiguous middle term, and, secondly, at the subtlest kind of error that occurs in experimental work.

The former of these subjects was briefly touched upon in § 11, where we began to see the harm that is done by the "formal" conception of a syllogism, which regards it as a structure formed by taking isolated terms, putting them together into isolated propositions, and then putting these together into a syllogism. This conception, by its assumption that the logical character of terms is fixed independently of their use in particular assertions, and that the logical character of "propositions" is fixed independently of their use in particular arguments, does as much as possible to obscure the fact that the syllogism is essentially the form of argument which consists in *applying general rules to particular cases*, and that therefore the meaning of the word or words which form the "middle term" is affected by their use in the particular argument. When the middle term X is viewed as a word found in the dictionary, coupled with S to form one proposition and with Y to form another, and then the conclusion distilled out of these two propositions combined, there is nothing to hold the structure together except some form of general consent about the meaning of X—for instance the general consent of the majority, or that of a group of experts. Such consent is required before the isolated propositions can get their constitutive meaning at all; and, once they have got it, by what authority is it to be afterwards altered to suit a critic who happens to find the argument inconclusive? The appeal to the generally received meaning of words stands in the way of our seeing how essentially fluid and purposive all meaning is.

One of several things that may be learnt by forgetting the unreal examples of argument that are given in the logic text-books, and trying to notice what happens in everyday disputes, is that statements made respectively with and without a special purpose stand on a very different footing as regards ease of acceptance or severity of criticism. Take, for example, any statement of a general rule, such as a proverb. Assent to it is much more readily given when its precise application is left open than when it is evidently meant to carry a particular consequence. Proverbs admittedly represent on the whole a large amount of well-tried experience and wisdom, so that in most of their applications no one finds fault with them. Given, therefore, a proverb which is not at the moment specialised to a particular use, but regarded in a broad and general way, why should we gratuitously search for any possible or future misapplications of it? That naturally seems like going out of our way to raise purely hypothetical objections; and hence the proverb, so taken, legitimately passes for a valuable truth. If, on the other hand, we call to mind cases where a proverb has been (in our opinion) misapplied, the proverb itself is seen to have a misleading influence; to that extent, at any rate, we begin to find fault with the proverb itself; we see that somehow it lends itself to this kind of misapplication. For instance, "A penny saved is a penny gained" would be a misleading proverb if it helped to decide us against calling in the doctor for a serious illness, or against paying insurance premiums. And some of the Free Trade axioms are accused by the Tariff reformers of being misleading in exactly this way.

Or again, take any statement of fact: for instance the statement that my watch is five minutes fast. Clearly the readiness with which we accept such a statement as true does depend a little on what is intended to follow from it. If nothing particular is indicated as its consequence we scrutinise it far less critically than if, for example, catching a train depends on its accuracy. A slight error may make no difference in the one case and all the difference in the other. Statements of rule and statements of fact are thus equally liable to take on new meanings—new importance—when they are used in a particular piece of reasoning. Doubts and questionings which are in a general way far-fetched or out of place become all important in regard to this or that conclusion.

Now in the application of any rule to a particular case, the need of this extra carefulness is always present; and that is precisely the meaning of the risk of ambiguity in a middle term. There is always the risk that the "truth" of either the rule or the fact (or both) is of a broader and looser kind than the purpose of the moment requires. The rule that all X are Y (*e.g.* "No gentleman cheats at cards") may pass for true when we do not contemplate S as a case of X; or S may be called X with sufficient accuracy when we do not mean to infer that S is Y (*e.g.* that Smith is innocent of the charge of cheating). And it is only, therefore, when rule and fact are viewed as parts of a piece of reasoning, not when they are viewed as propositions really independent of each other but accidentally conjoined, that this liability to subtle error is seen.

But the point we are now specially concerned with is that in a syllogism with an ambiguous middle, as soon as the ambiguity is discovered, and not till then, the falsity of one of the premisses becomes visible. For if the case S does (as the minor premiss asserts as a fact) come under the rule that all X are Y, then to dispute the conclusion is to dispute the *truth* of that major premiss; and on the other hand, if we accept the rule as true without exceptions, then to dispute the conclusion involves our finding the minor premiss false.

All that this amounts to, however, is that there is no possible example of an argument faulty through an ambiguous middle that cannot, if we choose, be regarded as faulty through error of fact in the premisses; for instance the paying of insurance money or doctors' bills may be regarded as exceptions which destroy the strict truth of the proverb about the saving of pence; or to say "five minutes" fast when we should say "four and a half" is, after all, an inaccurate statement of the fact. It is therefore a little difficult at first to see the need for two different names for what is at bottom the same defect in an argument—namely, error of fact in the premisses; and that may help to account for our inclination to put away "ambiguous middle" in a pigeon-hole on the top shelf of our minds, and almost to forget its existence.

But the real value of the notion of ambiguous middle begins to appear when we reflect that though this defect always implies falsity in the premisses, the latter defect does not always imply the former; we cannot, at least not without straining language unbearably, always see error of fact as a case of ambiguity. And if we enquire why this is so, we find that the distinction between cases of error that respectively can and cannot be conveniently viewed as cases of ambiguity depends on the grossness of the error. To translate a gross or downright error into an ambiguity would be fantastic—besides being, in a dispute, a tactical mistake—for the simple reason that ambiguity corresponds not to errors in general, but to those errors only which are subtle, that is to say, subtle enough to depend on a slight failure of accuracy or the neglect of a concealed difference between a word's usual meaning—for example, the word "slavery"—and some special case to which the argument refers. There is no ambiguity in calling a white thing black; it is in the application of these names to the various shades of greyness that ambiguous arguments arise. After all, the Chinese coolies in South Africa were not quite as free as English factory hands.

§ 22. "*Ambiguous Fact.*"

Let us now turn to ambiguity as it affects experimental work, namely, where we have given us a set of facts which may be represented by, say, half the letters of the alphabet (among which A and C occur), and where the question is whether in that complex occurrence A was or was not the cause of C.

Every one knows that in many of these enquiries there is—at any rate in their earlier stages—no need to bring in questions of ambiguity or definition. The errors committed may be so rough or simple that they can be detected without going behind the symbols in which the facts happen to be stated. For example, our opponent may have "put the cart before the horse" and taken A as the cause of C, when in fact C was the cause of A; or A may have been among the irrelevant circumstances antecedent to C; or again, C may have come into existence in spite of A, and not because of it. These and similar simple errors are common enough in detective or experimental enquiries, and wherever we can explain the error without going into questions of ambiguity, or asking for definitions, it is obviously better to do so. But there will always be a proportion of cases where this subtler and quasi-verbal method of criticism is the only one that can touch the real source of the error, and therefore we should be prepared to use it on such occasions.

It is at the point where *within* A or C, or both, a kernel and a husk begin to be distinguished, that questions of definition usefully arise. One of the disputing parties has been content to view A as a simple class (*e.g.* flashes of lightning) without important subdivisions, whilst the other sees reason to think that, whether A has or has not subdivisions which are *generally* important, it has some which are of importance to the particular question in dispute. Not A as such, he suggests, but A under special conditions, was the real cause of C in the case observed. His opponent's notion of "A," he complains, is too vague for the purpose for which he has used it, and has led him to leave an important detail out of sight.

The use, then, of the method of searching for ambiguities in experimental work is mainly as against errors which are too fine to be suitably treated by shorter and rougher methods. If we find that there are intermediate steps between A and C, it is generally better to say so than to attack the definition of the terms. For example, inquiries into meanings would be out of place in the malarial fever inquiry noticed above, at its present stage at least. A marsh without mosquitoes deserves to be called a marsh as much as an unloaded gun deserves to be called a gun; and an unloaded mosquito is a mosquito nevertheless.

§ 23. "*Verbalism.*"

Apart from its direct use in controversy, the recognition that clumsy conception of facts is the root of all subtle error in reasoning helps to clear our thoughts and to direct them in the search for an opponent's errors before we have definitely found what is wrong with his argument. It involves, as we have seen, a readiness to deny the value in application of the "Law of Identity";[1] and this attitude is itself one of our most important safeguards against the vice of "verbalism" (or "wordiness"). By either name I here mean what every one means who is able to recognise the vice; and there must be few indeed who have never become aware of it in their opponents. Speaking generally, it is a failing of youth rather than of experience. Clever young people are often full of it, and you may find it rampant in almost any debating society, in the controversial columns of our newspapers, or again in many a cautious and platitudinous leading article. One of the usual forms in which the vice appears is in the bandying of large imposing names of abstract qualities—names such as Courage, Justice, Patriotism, Nobility, and their opposites—without any suspicion that misunderstandings are possible, or that questions into which these words enter are clumsy and misleading questions, needing often a great deal of closer specification before they can be usefully answered. Another even commoner form of verbalism is where a distinction is taken for more than it is worth, and because two names—*e.g.* "truth" and "falsehood"—are in sharp contrast, it is assumed that the things so named are also sharply contrasted. Both of these forms of verbalism will be noticed again in Chapter VIII.

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[1] See p. 109 *n.*

One reason why clever young people are specially addicted to wordiness is that their confidence in the axioms of logic, such as the "Law of Identity," is not yet much tempered by experience. Their experience of difficulties due to ambiguity is not yet sufficient to be an effective check on their readiness to imagine that rules are better, instead of worse, for being concise and apparently simple. What could be shorter, or simpler, than the rule that A is A? and so they apply it confidently.

We need not here stop to consider the cruder forms of this confidence—those which involve some taint of the old belief that the nature of a thing may be discovered from its name,[1] or that you can arrive at facts by carefully scrutinising definitions—because the error we are now investigating is of a subtler kind than these. You may have firmly and finally understood that it is not safe to assume that "so-called A is really A," and yet you may fail to understand how, if A really is A, to describe or conceive it as A may nevertheless be misleading. It is here that the distinction between (what we called in § 19) general and particular importance is needed. This is what enables us to see that however perfectly the word A may describe a fact for general purposes, it may also be at the same time a false description of the same fact for the particular purpose of the moment. It is only before you recognise the need of this distinction that there can be any talk of "denying" the law of identity. As soon as you are aware of the ambiguity disclosed by it, you are aware that the only error was that of supposing the law of identity to be applicable. As the old logicians used to put it, A *secundum quid* is not the same as A *simpliciter*.[1] But modern logic leads us to doubt whether, in the world of fact, there is (strictly speaking) any such thing as A *simpliciter*, and thus to doubt whether the law of identity has any application at all except by consent of both parties to a dispute. If the details in a fact are endless, and if in order to describe or conceive the fact we must neglect some of them, what is there—unless we claim that our conception of every fact is infallibly the right one—to guarantee us against the discovery that some of the neglected details are important? Precisely the detail in a thermos flask that makes it useful for one purpose is what makes it useless for another.

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[1] See pp. 170, 235-40.

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[1] By which they meant that A *under special conditions* is not the same as A *as such*.

When, therefore, we ask for a general account of the occasions on which the request for a definition—*i.e.* for the removal of an ambiguity—is the best way of criticising an experiment which claims to be crucial, the answer is that the use of this method is exactly co-extensive with the risk of verbalism in the experiment in question. Where we are dealing with things that can be weighed and measured in a laboratory; where analysis and synthesis can be instrumentally checked and corrected at every step; this risk—though never entirely absent—is at its lowest, and therefore definition of the terms is seldom called for. Where, on the other hand, large and obviously complex matters—such as political or industrial phenomena—are dealt with, and much artificial simplification is needed to enable us to deal with them at all, the risk of verbalism is at its height. Every A in politics and economics is A *secundum quid*, and yet we are constantly tempted to treat it as A *simpliciter*.

Everyday examples of the way in which variations of purpose or of context affect the question whether A is A or not may be found in any of the distinctions which notoriously have a shifting or local value. The distinction that gardeners make between weeds and other plants is a familiar instance; the same plant is a weed in one locality and a garden plant in another. An even more familiar example is that of a fair wind for ships at sea, since the fairness of a wind evidently depends on the purpose of this or that ship, and no one supposes that there is any such thing as a fair wind for all ships alike. Or again, every one knows that an effectual lie may sometimes be told by telling the literal truth; faint praise, for instance, may amount to condemnation. It is almost proverbial that our judgments of other people's conduct or character are open to subtle and unconscious falsification in these ways; for instance, the account we give of the provocation received by our enemy in a quarrel may be strictly accurate, even strictly honest, and yet leave out a part of the *context* that would, if taken into account, reverse its general effect.

Now, any logic which tries to be applicable to disputes must find it difficult to rest in the view that cases of this kind are mere anomalies, to be left out of account because of their rarity. Rather it tries to see them in the light of a general principle to which they belong, and to use that principle in other cases where its value, though less obvious, is none the less real. It therefore asks *in general* what have context and purpose to do with questions of fact? Are we to make a distinction between facts which are universal and permanent and those which are local and temporary, or shall we admit that all facts exist only in a context and for a purpose? And if we admit this, how shall we use the admission?

The answer to the general question is given by the doctrine that the middle term of a syllogism[1] must not be ambiguous. As soon as we get beyond the shallow view that this rule merely forbids the use of "equivocal words" as middle terms, we have virtually made the admission that all statements of fact get their meaning with the help of their context and in the light of the purpose for which they are used. We may stop short, if we like, of saying that there is no useless knowledge,[2] because in disputed arguments we have only to do with facts which are admittedly supposed to lead to conclusions, and so to have a use; the disputed conclusion, where no doubts are raised as to its meaning, is there before the facts on which it is supposed to rest came into question at all, and therefore their special purpose and context are determined before we begin to ask whether they are true. And what this amounts to, in other words, is that any fact used in an argument runs a risk of being accepted as "true" because it is true in some vaguer and less special sense than is here and now required. The actual context is the principle under which it is supposed to come; its purpose is to apply that principle in the particular case and so to draw the conclusion.

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[1] That disputed arguments are generally too complex to be fairly represented in syllogistic form (Chap. II.) does not affect the point now before us, so long as we remember that the process of breaking up the whole of an argument into fragments ceases only when the parties can agree that "simplicity" has somewhere been reached. As we found at p. 56, no fact ever gets its evidential value except through a principle accepted as true; and thus we never escape the syllogistic form of argument in the end—only we learn to apply it with greater caution, and to wait for our opponent's consent before applying it at all.

[2] The recent history of philosophy shows how easily this concise statement can be misunderstood. See especially H. V. Knox's valuable summary of the "Pragmatist" controversy in the *Quarterly Review* for April 1909. As he there explains, the phrase has never

The distinction, therefore, between facts that cannot and those that can be altered by their context is—like many other distinctions we have to use[1]—rough and convenient, but not to be trusted unreservedly. Its value is constantly breaking down where we least expect it to do so, and the occasions where it breaks down are those where a subtle ambiguity in a middle term spoils

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been intended to mean more than that confessed (or proclaimed) uselessness in a so-called truth is equivalent to confessed lack of meaning. It is only another way of saying that there is a difference between a sentence and an assertion. See also below, § 43.

[1] See § 33.

a piece of apparently clear-cut reasoning. That, however, is a more technical way of describing them than we need adopt for ordinary purposes. When it is asked how we are, in disputes, to use the admission that facts exist only in a context and for a purpose, the answer seems to be that in a majority of cases the neglect of a fact's context can be equally well regarded as the neglect of an important detail in the fact. It is only where an opponent maintains that such and such details are not parts of the fact at all that we need remind him that at any rate they are part of the fact's context and may *therefore* be important. It is a way of saying that we cannot allow him to evade criticism of his fact as used in his argument by appealing to our readiness to admit the truth of his facts *as not so used.* And one of the forms that this objection naturally takes is that of complaining of ambiguity in his statement of the facts, and asking to have the ambiguity removed by a definition.

PART II

OBSTACLES AND CROSS PURPOSES

CHAPTER VI

THE SEARCH FOR A MEANING

UNDER the head of Obstacles and Cross Purposes we are now to review some of the commoner situations, arising in a dispute, which tend to hinder progress along the line we have so far kept in view—those which in the first chapter we put aside for the time as mere preliminaries of argument proper. It was there admitted,[1] however, that no stress can be laid on the distinction between those more elementary errors or confusions and the less obstructive ones which have been incidentally mentioned in Part I. The distinction does not pretend to more than convenience in broadly dividing our subject.

A general idea of these situations and difficulties may be given by saying that they are due rather to the *logical* ignorance of one of the disputants than to his ignorance of the special facts about which the dispute is concerned. But we must note that the logical ignorance here spoken of coincides only to a small extent with the logical ignorance which can be removed by the study of logic as now usually taught for examinations. There is no need here[1] to dwell on the difference between these two kinds of logical study, but merely to recognise that it does exist; in fact, some hints of its nature have already been incidentally given. Nevertheless the two kinds of logic do partly—so far, at least, as intention goes—cover the same ground; for instance, both are concerned to notice certain grossly confused methods of conducting a dispute—of trying to prove a point or to win a controversial victory.

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[1] Page 17.

§ 24. *The Total Destruction of Meaning.*

In view of the fact, so often already referred to, that the successful progress of a question, during argument, is from vagueness towards definiteness, we are prepared to find that one of the chief obstacles to such progress consists in the difficulties that stand in the way of getting vagueness removed. Here we enter a different atmosphere. These difficulties cannot be sufficiently understood on the assumption which we have hitherto made that the opposite parties are equally anxious to avoid error, and are ready if need be to stand corrected. Misunderstandings, however innocent in their origin, seldom cause much delay or trouble unless one party is interested in preserving them; and no argument need ever come to a deadlock unless one party desires to change the subject in order to avoid defeat. For a deadlock is not the same thing as an agreement to differ.

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[1] In a former book—*The Use of Words in Reasoning*—I have dwelt on it more at length.

On the other hand we cannot fully understand the tricks and quibbles[1] which are used for this kind of obstruction unless we understand also the sources of real difficulty in removing ambiguity. For no controversial trick can ever seem plausible except so far as it is connected with a real difficulty and made to appear a case of that. Our best plan will therefore be first to put ourselves at the point of view of a disputer who finds some important vagueness in a statement made by his opponent, and to enquire as to the real and sham obstacles he may encounter in getting the meaning made clear.

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[1] In calling them tricks and quibbles we need not assume that every one who uses them does so with conscious dishonesty; blind rage and lack of self-control in a dispute are often the source of them. And again, in political platform speeches and in the Law Courts a certain amount of downright trickery seems to be accepted as part of the game. But whatever the motive may be, they are at any rate in themselves tricky, since they tend to obscure the truth. As we shall see, each has its special kind of plausibility. It is for brevity and convenience only, therefore, that I here speak of them as tricks.

We saw in § 18 that one of the difficulties is that of keeping a firm hold on the distinction between important and unimportant vagueness—the former being what is meant by "ambiguity," so far as ambiguity is an evil or a defect. And corresponding to this difficulty we shall find that attempts to take the one kind of vagueness for the other are always part of the stock in trade of the quibbler who seeks to confuse the issue, either by raising unreal difficulties or by pretending that real ones are unreal.

In trying to get a meaning defined, the main thing is to remember that the charge of ambiguity is not a mere request to have an intelligible statement improved, or made more accurate, but a request to have a meaning given to it, which is as yet—so far as the questioner is concerned—entirely absent.[1] The complaint is not merely that the statement is badly expressed, nor even that it is false in fact, but that (for the time) it says nothing at all. There are two possible meanings suggested, and the request is that the speaker shall decide which he intends to abide by.

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[1] In a syllogism with an ambiguous middle term, the *conclusion* certainly has a meaning; but the meaning of one or other of the ambiguous premisses is non-existent till the ambiguity is removed. See pp. 76-9, 305.

The ground of the objection is that you would like to agree with him if you can, but that as yet you cannot make out which of two different things he wants you to agree with; for you can accept the one but not the other.[1]

Objections of this kind may be broadly divided into those which do and those which do not commonly rouse resentment in the person whose statement is accused of ambiguity. To the latter class belong, as a rule, ambiguities due to the form of sentence[2] rather than to the use of some particular word of doubtful meaning, and also those where a verbal ambiguity is of the comparatively harmless kind which a dictionary—or a formal logician—can recognise. Wherever a double meaning is obvious and familiar we are naturally on the look-out for it, and if we do not at once understand which of its meanings is intended, the question in such cases cannot well be made to look like a quibble. No one, for instance, who had described an overcoat as "light" would resent being asked whether he meant the opposite of "heavy" or the opposite of "dark." To call attention to ambiguity of this obvious kind gives little offence to any one;

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[1] In the case where you accept neither, there would be no relevance in calling attention to the double meaning; here, accordingly, the vagueness would be unimportant.

[2] These will be considered in § 27.

at the worst it convicts him of some carelessness in expression.

Far otherwise is it with the verbal ambiguities which, as we saw in §§ 17 and 18, correspond to ignorance of the importance of a distinction between two different kinds of X. This is ambiguity in a highly seductive and poisonous form, and there is no difficulty in seeing why the charge is apt to have an extremely irritating effect and to lead to recriminations. People whose views are nebulous often make the tactical mistake of putting them forward with excessive confidence; and then they have a strong motive for avoiding clear expression of them under a hostile searchlight. But even where this motive is in abeyance the discovery of an overlooked important distinction is naturally unwelcome in other ways. It calls for some troublesome readjustment of opinions, and the man who discovers the ambiguity has committed the crime of innovation. Not only is he likely to have a majority against him on this account, but, however modest he may really be, he is likely to find this virtue denied him. For you cannot discover a hidden verbal ambiguity in a statement made by another person without incidentally claiming to see farther through the brick wall of language than the other person has seen. It is the man who unexpectedly finds a statement clumsy and misleading, not the man who fails to find it so, who claims to appeal to facts as against the established and popular authority which belongs to common language; and such authority is strongly entrenched. Those who oppose accepted habits of thought must naturally seem conceited—when they are not thought to be intentionally quibbling. But that is only an added reason why they should take care to have the facts on their side.

The group of cases we have next to consider, then, are those where a statement is objected to on the ground that it clumsily confuses two sorts of X, and that (till the speaker definitely informs us) there is nothing to show whether both sorts are included or only one of them, and which—the ground of the objection being that if AX only is intended we can agree with the assertor, while if BX is intended we cannot do so. In the former case there is no question in dispute; and therefore until the assertor chooses to explain which of the two assertions he intends, he is in effect making no assertion at all so far as you are concerned. Thus when the late Lord Salisbury said, at the time of the late Boer War, that we were not "seeking" goldfields or territory, the phrase would convey no meaning to a person who admitted already that the greed for those things was not the nation's motive, and who wanted to know whether, nevertheless, annexation was or was not part of the programme. That is to say, from the statement as it stands, and without further explanation, he would not be able to discover whether *anything at all* was intended to be said about annexation—whether *any* answer was given to the question in his mind.

There is some natural difficulty, at first, in recognising that meaning is *entirely* absent from an ambiguous statement. For one thing, it is evident that even when a statement is convicted of important vagueness this affects only the outlying fringe of it; that it contains a certain body of assertion though its precise limits are not clear; that it is at any rate more assertive than total silence would be, or than a mere farrago of nonsensical words. And for another thing, the man who makes the statement is precluded from allowing that it is meaningless by the fact that for him it certainly has some meaning—and often, in fact, two different meanings successively.[1] No one, we may presume, makes statements without some intention behind them, even if he does not clearly know what his own intention is, or even if his intention is to draw a red herring across the scent of a difficulty, or to convey a downright falsehood. And again, it is obvious that a statement which conveys no meaning to one person may convey a clear meaning to another who is better instructed.

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[1] See pp. 168, 181.

It would be folly to dispute any of these truths. All vagueness, no doubt, belongs only to the fringe of an assertion; even the most unreflective statement expresses some previous thought, and also has some sort of purpose; and again, there are other ways of missing a statement's meaning than by finding an ambiguity in it. But in the first place, just because vagueness is always an affair of the fringe, it follows that wherever an ambiguity is discovered the fringe of the assertion is the only part that, between the parties concerned, is in dispute. All else is out of focus for the time; the fringe is, for the purpose of that particular dispute, the whole of the assertion that the statement can be intended to make. Wherever any fact is in dispute between two people it is only the doubtful part of the fact that is asserted by one against the other. In a dispute neither party asserts what the other freely grants as knowledge common to both. Assertion exists only as the solving of a doubt or the answering of a question.[1] When therefore it is said that meaning is entirely absent from an ambiguous statement, only the assertive part of the statement is referred to.

In the second place, a meaning that is understood by only one of the parties is also, for the purpose of the dispute, no meaning at all. No issue can be joined, no intelligent dispute can be carried on, so long as the meaning of the statement made remains a secret locked in the breast of one of the parties. For the purpose of the dispute, therefore, there is no assertion made. So far as this point is concerned, it is immaterial whether the failure is due to the questioner's sheer ignorance or to his perception of an ambiguity; in both cases the meaning is, for the purpose of the dispute, non-existent.

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[1] See pp. 193 *n.*, 194.

It follows, then, that to say that ambiguity destroys every vestige of the meaning of a statement is only to say that the dispute is blocked for lack of a point at issue. The total destruction of meaning occurs only as between the two parties to a dispute. As we found in § 20, a definite error may be expressed in a clumsy statement. But since the finding of an ambiguity depends on real or *fancied* knowledge of facts, it is also possible that a *truth* may be expressed in a statement in which an ambiguity is discovered, a statement which seems clumsy but is not so. It is this latter fact which, as we shall presently see, is sometimes put to a tricky use by the quibbler who shrinks from making his meaning clear.

§ 25. *Some Tricky Defences.*

Notoriously it does not always suit an assertor's comfort or dignity to have these pressing questions raised. Such an assertor will often do his best to evade them. Various ways are open to him of trying to prevent the question "What do you mean?" from being considered worth answering; and the least foolish of them, where circumstances allow of it, is to leave the question unanswered in the hope that his omission will not be widely noticed.

When, however, he is unlucky enough to get drawn into a controversy, he has a choice between three lines of defence. He may try to make out that the objector is dwelling on a petty verbal refinement instead of taking a broad and sensible view; or again, that the question is a merely aimless and irresponsible one, such as any fool can raise about any piece of wisdom; or lastly, he can in certain cases pretend that the question has no standing ground since it involves a denial of one of the fundamental axioms of thought. The general *modus operandi* in all three cases is, however, the same so far as it depends upon avoiding at all costs the admission that an ambiguous statement is one that makes no assertion at all.

The first line of defence consists mainly in ignoring the distinction between important and unimportant vagueness. It claims in its support the well-known fact that vagueness is often an excusable defect. "We are not here dealing with an exact science," says the vague assertor. He points out, perhaps, that all the most important kinds of business in life—all the arts of conduct generally—are of necessity carried on by means of rules and notions that are more or less vague, and that people who press for exact definitions in them are people of small experience and capacity.

The answer consists in freely admitting this fact, and even carrying it further. Not only, you admit, are all the arts of life dependent on vague knowledge, but also every kind of science which has to do with facts in Nature. That being so, you admit, of course, that the charge of vagueness has no point unless it be also claimed that the vagueness is important. And in this particular case its importance consists in the fact that until the assertor chooses to tell you which of the two proposed meanings he is willing to abide by, you are wholly unable to tell him whether you agree with him or not. There is, therefore, at present nothing at all put forward by him for your acceptance. The choice lies with him; if he likes to leave the matter so, that is his affair. Presumably, however, he wants to convince you, and now he knows how to take the first step. Incidentally you will know what to think of his refusal.

A livelier and more aggressive defence, along the same line, is sometimes used where the word objected to is one of those which approach the type called "univocal" by the formal logician and the dictionaries. "What an absurd question!" he says; "every sensible person knows what X means."[1] Thus he gives you an opportunity to remind him that the charge of ambiguity in a word *as used* is not a complaint against the word itself—which may be on the whole an excellent and most useful word—but entirely against the particular statement whose assertive force or value this word happens to destroy. What the critic says, in effect, is "You may bring me a thousand other statements which employ this word harmlessly, and yet the word as here used remains importantly vague. It is this particular assertion, not the thousand others, which you are asking me to accept, and (if you are not afraid to do so) you must let me have the chance of knowing what the assertion is. His statement that all X are Y, for instance, is true if he means by the familiar word X only the well-marked forms of X. But you have in view a less well-marked form of it, and perhaps he wishes to include this also. Is that his intention or not? If not, you can accept his statement, otherwise you would dispute it. What possible object has he in withholding this simple piece of information—unless, indeed, he thinks it safer to hide his real meaning?

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[1] *E.g.* the word "seek" in the instance given on p. 159 above.

The second line of defence is equally common but even less effective. The assertor here pretends that in asking "What do you mean?" you are expressing bewilderment merely, instead of noting an actual ambiguity. He will, therefore, hint that you really ought to get up the rudiments of the subject before putting forward your crude objections in the presence of an expert like himself. Your criticism, he will suggest, is about as valuable as that of a schoolboy who presumes to find fault with a statement in the higher mathematics on the ground that he cannot understand it.

This defence, we see at once, involves an almost grotesquely improbable assumption about the state of the questioner's mind, and the only excuse for it is the poor one that the same verbal form of question might be used both for the aimless and the pointed enquiry; the question "What do you mean?" might conceivably be asked either from sheer ignorance or from the knowledge which enables you to see the ambiguity. It may or may not be excusable that the shifty assertor should choose the former explanation in the first instance, but to stick to it in the face of further explanations is fatal. As we have seen, the charge of verbal ambiguity other than of the obvious or dictionary kind, is brought always on the strength of supposed knowledge—knowledge of the importance of a distinction. It may show undue conceit, since the supposed knowledge may be false, but the one thing it never can show is aimlessness or mere bewilderment. The charge of ambiguity is always a pointed one; it refers to the word X, distinguishes the two meanings, and asks for a choice to be made between them. Your acceptance or rejection of his statements depends entirely on his making this choice; and surely he cannot want to entrap you into verbally accepting what you really reject? The non-existence of any point in dispute is therefore again what you insist on. He can easily remedy the defect if he cares to—and dares. But the chances are that if he has used this shabby defence at all he will never meet your question squarely. All you can then do is to draw the natural inference, and make the natural comment.

A rather less foolish form of the same trick is where, instead of assuming that the question is asked from mere bewilderment, the quibbler admits that you have discovered what seems to you an important clumsiness of statement,—an important distinction between AX and BX,—but, instead of enquiring whether you are mistaken or not, insists dogmatically that you are mistaken. This is the case referred to at the end of § 24. Where two people disagree about the importance of anything, it is the easiest thing in the world for either of them to refuse to hear what the other has to say in favour of his view. A dispute can at any time be deadlocked in this manner. As we have noticed several times already, no one can be compelled to dispute with you when he suspects that you have the best of the argument.

§ 26. *Tautology as Refuge.*

The tricks just noticed, though still often used, can seldom have more than a short-lived effect. But the third of the three lines of defence mentioned on p. 163 deserves more attention, because it is generally more possible to view it as an excusable confusion rather than as a trick. In some of its forms, at least, it has plausibility enough to mislead those who have no desire for anything but the truth.

This third way of resenting the enquiry after a meaning usually occurs where vacillation between two ways of interpreting a statement is tempting or convenient. It often happens that we express a view very differently on different occasions, narrowing its extent or force when we have to defend it against opposition, and removing these restrictions as soon as the opposition slackens, or when addressing a sympathetic audience. What makes this possible are the different interpretations to which the same form of words is usually open, so that, taken in one sense, a statement may seem harmless enough, may even seem undeniable, while taken in the other it makes a large and risky assertion. There is, indeed, a kind of backsliding from cautious views into incautious ones, to which we are all liable—like the difference between our manners or morals when we are on our best behaviour and when we are not. And this is a comparatively harmless habit, because we are generally ourselves aware of the difference between the two attitudes. But in the heat of controversy self-criticism of this sort is usually not at its clearest; it is postponed to a more convenient season, and meanwhile we attempt to justify the incautious view by confusing it with the cautious one. In the extreme form of the fallacy we seek to justify a shaky assertion by turning it, for the time, into a tautology—a statement that cannot be denied without self-contradiction—and the undeniability is then used as a refuge against criticism.

If the fallacy of "begging the question" be defined as "covertly assuming the truth of a conclusion when you profess to prove it," then this confusion is at any rate closely analogous to question-begging. In fact the difference is that here we can hardly say that there is any conclusion. There is only a vacillation between an assertion which requires proof and an empty statement which, because it is empty of meaning, presents no point of attack. We will therefore leave the fallacy of "begging the question" to be considered separately in our next chapter, and treat this as a case of sham or confused assertion. But anyhow, whether we call it question-begging or not, there is an ambiguity in the statement so defended, and the ambiguity needs to be cleared away before the assertion can have its truth examined.

The situation arises wherever an attempt is made to prove a statement true in fact by means of merely verbal considerations. Both general rules and particular "facts" are at times defended in this manner, but general rules are especially liable to it. The statement that all X are Y is defended on the ground not only that no case to the contrary is known to exist, and that our knowledge of causes and effects conflicts with its likelihood, but also that such a case cannot *ex vi termini* even be imagined as possible—cannot, that is, be found so long as we keep strictly to the "correct definition" of X, which definition expressly excludes any case which is not Y. Clearly we could make any general statement true by such a process if that were all that is needed. The pursuit of truth would become a simple matter indeed if a truth were something that anybody could create by defining his words. If you choose to *interpret* a statement so that it cannot be denied without self-contradiction, then it is merely your interpretation of the words that has made the statement undeniable, and its undeniability has nothing to do with the nature of things. Such a statement does not correct any possible error, and does not give information about anything except your arbitrary definition of a word or pair of words. You cannot make black really the same as white, or evil the same as good, by explaining that you intend to use the two words as equivalent.

The examples about black and white, or good and evil, are intentionally absurd, and the reader has probably never met with them as serious arguments. But we have all met with a good many cases which differ from them only in concealing their absurdity with some success. There is never any real temptation to deny the whole difference between black and white, or good and evil, though we are often inclined to deny that some particular way of applying the distinction is the best. Let us ask, therefore, in what kind of cases there is a real temptation to defend a generalisation about facts by defining its terms so that it cannot possibly be false.

Evidently there is none in the case of rules which we all regard as open to doubt—rules that are admittedly rough or loosely expressed. The temptation increases with the *general* value—the quasi-axiomatic character—of the rule which is criticised. But it is not every such rule that actually incurs serious criticism, and if we ask what further condition is required to bring about the situation here referred to, we find that it is always some possible *use* of the rule that has attracted the critic's attention. Take, for instance, the highly axiomatic rule about the survival of the fittest. As long as this is used merely to explain (after the event) the survival of species A and the dying out of species B, it naturally meets with no opposition; it gives us a wider and more consequential view of a process which we might otherwise have seen only piecemeal and far less intelligently. But imagine it used as a major premiss, *i.e.* to *predict* survival in a given case, and at once it lies open to troublesome questions about the precise meaning of "fitness." Such questions do not even begin to be answered by dwelling on the axiomatic quality of the rule in its other use.

Or take the axiomatic rule that the same cause always produces the same effect. When this is used in connection with *observed difference* of effect, and taken as allowing us to infer difference of cause, no one finds fault with it. Such criticism as the rule meets with refers only to the use of it for inferring sameness of effect in the future from observed sameness of effect in the present; for that purpose it is one of the most misleading possible rules. Yet there are many defenders[1] of it whose defence consists in elaborately showing its truth in the sense in which no one disputes it—the sense in which its denial would amount to a contradiction in terms. The much-needed reminder that a thing need not be what it is *called* is confused by them with the unintelligible doctrine—never actually put forward—that a thing need not be what it *is*; with the result that they evade the criticism, instead of attempting to answer it.

There have been cases, though they are not very common, where the line of defence taken is that of complaining that the critic of the axiom will not allow the assertor to define (*i.e.* to explain) his own meaning. "You ask me," he says, "to tell you what the axiom means, but I have already done so. I have *defined* the word X in a sense which makes any and every denial of the axiom impossible. If, therefore, you still raise any objection, it cannot be an objection to the axiom as I intend it, but only to some inferior substitute for it—some mere practical rule, most likely, on a lower plane altogether."

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[1] *E.g.* Mr. Joseph in his *Introduction to Logic*, p. 378.

The assertor's intention may be lofty, but his claim that it is so does not answer the question what the lofty meaning actually is. The objector now has to explain that his aim is not to prevent the speaker from defining his meaning, but only to prevent him from destroying it. By all means let him define it as he likes, but to define a word used in a general statement is to remove all doubts about the application of that statement in particular cases, not to increase the doubts. To explain that in the statement "all X are Y" the word X has *not* this or that suggested application still leaves the puzzled enquirer asking what application it has; and the longer this merely negative process is continued the stronger grows the suspicion that the only application that will be allowed is to those cases of X that are already known to be Y—to the cases, that is, about which there is no dispute between the parties. Let us imagine the statement to be that "a man has a right to do what he likes with his own property."[1] "But," says the objector,

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[1] *I.e.* (in logical form) "All property is at the disposal of its owner."

"what about such and such well-known legal restrictions on the use of property?" The assertor is tempted to reply that in these cases we have not property "in the strict sense of the word." The objector hereupon suggests that it would be interesting to know what this "strict sense" is—what precise form of property comes under it. "It cannot surely," he asks, "be meant that a man may do what he likes with his own property just because his own property—in the strict sense—is only that part of his so-called property with which he may do as he likes? If so, what information is the maxim supposed to give? Who has ever wished to deny that if you define X as co-extensive with Y, then X, taken strictly in that sense, is Y beyond a doubt?

When a general statement has to be defended by talking about the "strict sense" of a word, the objector is likely to triumph; for the phrase often means that the assertor, having only a vague notion what his strict sense really is, has fallen an easy prey to the temptation so to "define" his statement that it cannot be false; in which case its meaning—for controversial purposes—vanishes altogether. On the other hand, for uncontroversial purposes—*i.e.* for the uses to which the assertor himself wishes to put it—it no doubt has a meaning; and the still unexplored question is whether, in that meaning, it is true. This question the assertor has preferred not to explore, and though he cannot be forced to do so, the fact of his unwillingness gives opportunity for comments.

But a commoner defence consists in assuming that any one who proposes to criticise an axiom must necessarily be trying to "deny an undeniable truth." We have already briefly referred to this above,[1] but more remains to be said. This assumption often bears all the marks of a genuine belief, and indeed is almost inevitable in those who have not yet perceived that the whole meaning of any general statement resides in its application. Nevertheless the objector who knows his business has a perfectly valid answer to make; the assumption is a false one, due at best to a misunderstanding of the point at issue.

For how comes it that a doubt ever seems to be thrown upon any general statement—even an axiom? We saw, in § 21, how in the case of proverbs fault-finding only begins in view of particular applications; and this is none the less true of axioms—which indeed possess the quality of "general wisdom" in an even greater degree than proverbs. There is no temptation to any one to dispute anything about an axiom except one or more of its possible applications. If—to make an extreme supposition—we could imagine an axiom intended to have no application either now or at any future time, there would be no difference in result between accepting and denying it; no difference except one of empty sound between the answers Yes and No. Always, therefore, the criticism of an axiom arises in and is really directed at some one at least of its possible applications. To call a statement untrue is neither more nor less than to call it misleading, and that which has no application can evidently not mislead. What, for instance, would be the point of saying (or disputing) that "Business is business," or that "Boys will be boys," if such expressions carried no meaning beyond their undeniable verbal one? Whether business should under all circumstances be conducted on the simple rule, "Grab all you legally can," or whether boys, because they are boys, should behave like Smith minor,—these are the questions which we find disputed and often hard to settle; not the mere vague assertion that there is some difference between business methods and sentimental ones, or between a boy's and a man's responsibility,

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[1] Pp. 109-111.

The so-called denier of undeniable truths, then, is never more than a denier of certain possible applications of an otherwise harmless or useful formula. His position is that he cannot intelligently say Yes or No till he knows whether the suspected application is or is not intended. "The whole is greater than its part?" Certainly, if the two things you have in view are really related as whole and part. "Two contradictory assertions cancel each other?" By all means, if you do not apply this to a pair of harmonious statements which happen to be expressed in contradictory form. "Whatever is true of a thing is true of its like?" No doubt it is if you are quite sure that the likeness in question is sufficient to warrant the inference that is drawn. In all cases where an undeniable truth appears to be denied, the appearance is illusory; it is always some actual or foreseen application of an axiom, never the axiom regarded as free from the need of any application, which is the point in dispute. And if the defender of an axiom persists in supposing that you are disputing the axiom and not its application, it is always easy to admit the axiom as true in some unspecified sense, while you specify the sense—*i.e.* the particular applications—in which you dispute it.

Lastly, a less unintelligent form of defence is where the assertor complains, not that the objector is trying to dispute what is indisputable, but that if the criticism be admitted in this one case the real value of the axiom is weakened throughout. No doubt axioms, like other creeds, are largely under the necessity of being used by the careless, the ignorant, and those who achieve more by following some authority than by thinking for themselves; and it may be that to scatter widely a knowledge of the weak points[1] of an axiom is therefore unwise. But whether this be so or not,[2] the plea can hardly hold good between two parties actually disputing. If the assertor admits that he himself belongs to the class who need this tender treatment, one wonders what he is doing in the dispute at all; and anyhow the admission gives his case away. If, on the other hand, he does not himself ask for consideration in the matter, it is only irrelevant to the occasion to ask it here and now for other people. The present dispute, after all, is only between the present parties disputing.

The above remarks on the sham defence of general rules need only slight alteration when we consider the application of the same false method to the defence of particular statements of fact. In the one case the oracle dislikes and evades questions about the precise definition (*i.e.* application) of X in the rule that all X are Y, in the other case he dislikes and evades in the same way questions about the definition of X in the statement that so-and-so is X. But in both alike he attempts to make his statements undeniable by whittling away its meaning till nothing is left to be denied.

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[1] It follows from what was said above that the only weak points an axiom can have consist in its liability to false application.

[2] The occasions probably exist, though it is easy to imagine them more common than they are. On the whole it seems that the people to whom doubt would be disastrous if they felt it, are as a rule provided with sufficiently thick armour.

It will, perhaps, be enough to notice one special class of occasions where the confusion occurs in this second form, namely, in questions about the "existence" of such and such a thing. For example, the question used to be asked whether there exists any such thing as what certain economists called a Wage-Fund. There is no longer any heat in this dispute, so we may quote it harmlessly. The objectors admitted that a certain amount of money is, at any period, actually spent in paying wages, and that if that was all that was meant by the term no one would be likely to deny the existence of a wage-fund. One might as well deny the existence of the people to whom the wages were paid. But, they said, if because we choose to call it a fund we imagine that it is at any period a fixed inelastic sum, the statement can be denied as easily as any other error. The choice between accepting and denying it, therefore, turns—just as in the case of apparently undeniable axioms—on the precise interpretation that is put upon the statement. Taken in one sense it is a truism; taken in another sense it is untrue. Are we, then, not to ask which of these meanings is intended lest some one should accuse us of quibbling? The real quibbling is on the part of those who try to support a shaky assertion about the facts, by means of a term which can be used indifferently in either meaning. Their quibble consists in shifting about between the two meanings, and thus using an "undeniable" statement which conveys no information about the facts, to support a highly deniable statement which resembles the former only in containing the same ambiguous term. It may be taken as a safe rule that wherever a serious dispute occurs about the "existence" of anything, the point really at issue is the precise "nature" of something which both parties admit to exist in a sort of way. An example familiar to philosophers is that of the question as to the "existence" of an external world.

We are now in a better position for viewing this difficulty from both its sides. As regards rules, it should be freely confessed that no rule is likely to win wide acceptance unless it has been proved to have real value for inference, at least in a general way; and that the more of such value a rule has been found to possess, the more solid become the reasons for not denying its "truth." The probability is, therefore, that any rule for which total undeniability is claimed has a good unusual kinds of verbal mistake. For example, there is the doubt whether a statement is to be taken in its most literal sense or not, or again the doubt which of two equally possible grammatical interpretations is intended. These varieties of ambiguity defy useful classification; but that matters little since the remedy for them is far more easy to apply than for the ambiguity which belongs to a clumsy description of a fact or a clumsy statement of a rule. To distinguish them from the others we may call them literary doubts.

One reason for their comparatively non-controversial character is that any resentment the person accused of them may feel is, as a rule, ineffective, and he generally finds it wiser not to haggle about his answer. When you ask whether, for instance, his statement is meant to insinuate more than it strictly says, a refusal to explain would itself amount to an answer. Except in the most simple-minded logic it is everywhere now admitted that strict rules for interpreting sentences are not to be trusted blindly. At best they are merely grammatical or dependent on custom; and often they are quite arbitrary—like the old logical rule that the sentence "*Some* X are Y" (*e.g.* some lawyers are honest) shall convey no implication that any

with a capital letter. What was meant was the Anti-something Society to which the plaintiff belonged.

X are otherwise. In real life implications of this kind are notoriously often made, and hence there is nothing strange in asking whether in a given case they are intended. Why should we be expected to take a sentence literally when some other than a strictly literal sense is intended? The general public is here on the side of the questioner.

Though difficulties of this kind defy classification, there is one special form of them that should be briefly noticed here, namely, those where a pair of sentences, which on the surface or in their "strict logical interpretation" do not guarantee a given conclusion, are meant to be *interpreted* so as to avoid this formal criticism. Reasoning which adopts more or less closely the syllogistic form is still occasionally employed in disputes, though most of the old technicalities are wisely discarded.[1] And where this occurs it is sometimes not quite easy to distinguish between a real slip in the reasoning and a case where the speaker's actual meaning in one of the premisses is different from what the old logic would complacently say he must mean. The notion that if you happen to say "all X are Y" (*e.g.* "Bad workmen complain of their tools") you cannot possibly mean "all Y are X" (*e.g.* "Those who complain of their tools are bad workmen), is one that dies hard in those who have taken their formal logic too seriously. As the reader may remember, the central part of its teaching was concerned with supporting in every way this strict interpretation of sentences according to their form. It was full of rules and mnemonics based entirely on this procedure and designed to prevent our using "invalid" forms of syllogism—forms which may have a false superficial appearance of being valid and conclusive. For this purpose a number of imaginary forms of apparent syllogisms were given as exercises; and some of these may be, no doubt, confusing enough—just as confusing as problems about the relationship of Dick to Tom, on the assumption that both are distantly related in different ways to Harry; consequently slips in giving the correct answers are always possible. The general problem in performing this kind of "reasoning" is to discover the precise relation between two classes,[1] S and P, from information given about the relation of each of them to a third class, M. Thus if we are told that all the class S is included in the class M, and all M in P, we correctly infer that all S is included in the class P. On the other hand, if we are told that an indeterminate part (possibly the whole) of the class S is included in M, while all M is included in P, then we can only draw the conclusion that an indeterminate part of the class S is included in P. The process is, therefore, one of interpreting pairs of sentences, and the errors made in it are slips of interpretation, analogous to those we may make in adding a column of figures. The difference is that in real life we do occasionally meet with columns of figures, but almost never with the kind of syllogistic problems that are given in logical text-books.

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[1] It is seldom that we find an attempt made, in any real dispute, to refute an opponent by accusing him of using an invalid form of syllogism in such and such a "mood" and "figure." Almost the only remains of the old method now found in use—and that hardly ever—is the accusation of "undistributed middle" or (what is the same in effect) of "converting a universal affirmative simply"; *i.e.* taking "all S are M" as equivalent to "all M are S," or "all M are P" as equivalent to "all P are M." It is not worth while here to enter into an explanation of what used to be meant by "mood" and "figure," or by a "distributed" term. Even the worst formal textbooks will supply this information to any reader who has the curiosity to look it up. But I may mention that a syllogism with an undistributed middle is defective for the same reason as one with an ambiguous middle—namely, that it fails to show the connection between the rule and the case.

Still, there is no harm in admitting that syllogistic slips are possible, and that when they occur they call for correction. This is a very different thing from assuming, without further evidence than the mere words of a statement give, that such a slip has actually been made in a given case. Sins against the "logical" interpretation of sentences are also—to put it mildly—a possibility to be reckoned with; and it is even a little absurd nowadays to regard them as sins. So frequently are statements intended to mean a little more than they strictly say, that there is some excuse, at least, for not being sure whether a given statement is meant to be taken as "simply convertible" or not. But where we are in doubt whether more is meant by a sentence than it strictly or grammatically expresses, the best plan is to treat it as ambiguous and ask to have the ambiguity removed. Only the trickster, and indeed only the more ineffective kind of trickster, will ever resent the question.

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[1] Where S is an individual case (*e.g.* Smith) it may be treated as a whole class without causing any error. The symbols S, M, and P are commonly used in the text-books. They correspond respectively to the symbols S, X, and Y as used in this chapter. There is no one system of symbols that can be called the best for all purposes. In this book I have kept S throughout, but have varied the symbols of the predicate term in order to suit the exposition of different points.

And the same applies to all the other misinterpretations which may conceivably take effect in apparent violation of the syllogistic rules; for example, taking "some P are not M" as equivalent to "some M are not P"; or "no S are M" as equivalent to "all not M are S"; or assuming that "some S are M," implies that "some S are not M," or that "all M are P" implies that "some P are not M." Some of these, indeed, show a hardly defensible looseness of expression, but in all such cases a doubt is conceivable as to what the speaker's intention really is; and it is generally better to get such doubts cleared up before we (even tacitly) base any syllogistic reasoning on our first interpretation of the statements, however natural or verbally accurate it may be. Of course, however, this would not apply in a world where the process of syllogising from statements in given form was the only known method of reasoning. In such a world we should have to play the game with all the mediæval strictness and solemnity.

In Chapter II. it was, I hope, made sufficiently clear that our logical views do not include any wholesale condemnation of the old doctrine that all simple arguments are syllogisms and depend on a major premiss. That may be admitted while we still decline to take the rigmarole of mood and figure seriously, and to play with sham difficulties instead of exploring the real difficulties of disputation. If we accept the general account of the nature of argument that has here been given, we see that the most serious and pervasive error in reasoning is that which is due to mistakes of fact, leading to mistaken causal explanations; and that the subtlest of such errors are those which are due to the kind of ignorance of facts which permits an important distinction, and a consequent ambiguity, to remain unnoticed. But in the syllogistic problems of the text-books just this latter situation between the parties is quietly assumed to be absent. Formal logic cannot get to work except on material supposed to be free from ambiguity.

In another way, too, the machinery of formal logic is antiquated. A curious feature of its syllogistic moods and figures, valid or otherwise, is that the importance of a causal view of things is ignored in them. All things are there conceived as tied up into classes which wholly or partly include or exclude each other, and which are never regarded as themselves in need of readjustment. Some centuries ago, perhaps, this was the natural way of framing arguments, even for grown-up people. But the dependence of classification on purpose, and the connection of purpose with human interference with things under the direction of our knowledge of causes, has now for a long time been growing more and more widely recognised.

It seems better to admit frankly, then, that the solving of these syllogistic problems is on the whole little more than a kind of word-game, supposed to be of some use as a mental exercise. Just as we cannot play chess or cards without ready-made apparatus, so here the play cannot begin till we have already got statements of a certain shape before us. We are bound to have nothing to do with any[1] statements except those of the inclusion and exclusion of classes (in whole or in part) by one another; only, in order to give us a chance of confusion, and so to induce us to use our ingenuity, the rules of the game allow these statements often to come before us tail foremost, and therefore to need recasting. We may have to interpret a statement about the relation of class M to class S (or of class P to class M) as a statement of the relation of the latter class to the former. This interpretation is technically called "conversion," and if we cannot convert statements correctly our chance of success in the game is small. Still, a few hours' application ought to enable any passman to floor the examiners in this subject; and he will find the work easier if he ceases altogether to trouble himself about the remote connection that may be found between formal logic and the ordinary kinds of reasoning.

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[1] I here leave "hypotheticals" out of account, partly because they do not enter into the main doctrine of the syllogism, and partly

§ 28. *Verbal Inconsistency.*

Any two statements are said to be "inconsistent," or to contradict each other, when one of them takes back what the other has said; as, for instance, when in answer to a charge of libel the defendant pleads (1) that he did not speak the

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because formal logic, in so far as it does take account of them, treats them as "modal" categoricals, *i.e.* as class statements made under a condition.

words imputed to him; (2) that, even if he did, plaintiff had suffered no damage; (3) that he spoke the words about the plaintiff not in the way of his profession or business; and (4) that if he did speak them they were true in substance and in fact, and spoken upon a privileged occasion and without actual malice.

And any single[1] assertion contains an inconsistency if it says two opposite things at once; as, for instance, that a piece of news is both expected and unexpected, or that an act was done both accidentally and on purpose.

The attempt to pin an assertor down to a consistent assertion has, in one respect, the same obvious advantage as the attempt to get him to remove the "literary doubts" already mentioned. It naturally strikes every one as a reasonable thing to ask. Just as we are all acquainted with the inclination to use irony, or exaggeration, or in other ways to say things that are not intended to bear a literal interpretation, so we have all felt the strength of the temptations to inconsistency, and have fallen into the simple slackness to which on occasion it may be due. Hence inconsistency is quite a popular charge to bring, and as a rule it cannot be dismissed contemptuously, but needs explaining away.

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[1] This phrase need not commit us to the view that there is any such thing as a single assertion—except, of course, in grammar. A so-called single assertion is all that is here intended. The difficulty of saying what is "one" assertion, and what is more than one, depends on the difficulty (noticed above in §§ 2, 7, and 16) of the distinction between simple and complex facts.

Yet it differs from the "literary doubts" in the fact that it leads more often to controversy. That is to say, the charge is met by a defence which raises other questions between the parties. As a rule there is a good deal of provocation in the charge of inconsistency, since it may seem to imply that the assertor hardly knows what he is saying, or even to suggest that he is vacillating in a tricky manner—that he makes a larger assertion when he thinks it will not be challenged, and a smaller, more careful one when opposition arises. For though inconsistency is often due to mere hazy thought, it may also have a less innocent origin. The insincere arguer is even more apt to contradict himself than the forgetful or careless one. At its mildest, then, the charge of inconsistency is naturally resented, and the person accused looks about for means of retaliation.

Apart, however, from these provocative qualities, the charge of inconsistency demands an answer, since the resulting vagueness can easily be shown to be important. From the fact[1] that every assertion involves a decision between the answers Yes and No, it follows that a statement which gives both answers at once expresses no assertion at all. The assertor is therefore asked to choose one or other of the opposite statements and abide by it; till he does so there is no use in paying further attention to what he says. He must make up his own mind before he undertakes to make up ours. At present he seems to have no steady opinion, or at any rate shows none to us. His "Yes" and his "No" cancel each other, and leave us in darkness as to his real intention. If he contradicts himself he saves us the trouble of contradicting him. We can perhaps accept one view or the other, but certainly not both at once. In using any of these phrases it is clear that we avoid committing ourselves to an explanation of the way in which the assertor fell into the

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[1] For several purposes (see also pp. 102, 161) it is worth while to remember that every assertion is, in its essence or purpose, an answer

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to an expressed or implied question. To give to an audience "information" which they already possess is not to assert anything. For example, in the rare cases where it may be thought necessary to assert that two and two are four, the justification for doing so consists wholly in the fact that your audience appears to be forgetting this elementary truth, and therefore to be (for the moment) virtually disputing it. Assertion, as such, is the attempt to solve a previous doubt which is known or supposed to exist; it is an answer to the question whether such and such is or is not the fact. Hence no speaker likes to be accused of telling us something we knew already—something we have not for a moment forgotten and have never dreamt of disputing. Such statements are sham assertions, whether used in attack or defence.

inconsistency, or what further inferences may be drawn as to the weakness of his case. We still leave him free to explain away the inconsistency if he can.

Let us look now at the effective lines of defence that are possible. The gist of them consists in laying the blame on the language as contrasted with the real intention; and there are two chief ways in which this is done: either (1) by admitting that stricter expressions might have been used if there had seemed to be any need of them; or (2) by tracing the contradiction to the necessary defects of the only words that were available. In both defences the claim is made that the inconsistency is of a merely verbal kind and involves no real vacillation of view; but in the former there is also a possible implication that the objector has gone out of his way to raise a trivial objection, or has been deficient in the common sense which interprets statements freely and reads between the lines of what is expressly said.

When the former of these defences is used, the objector—if he has a strong case—can afford to leave the implications unnoticed. So long as the explanation is given, that is all he has asked for, and the assertor's gratuitous opinion about the need of it does not interest him. "At any rate," he says, "now we know what you do mean";

and then the way is clear for beginning the examination of the evidence.

The other defence, however, is of a more troublesome kind, since it inevitably raises further questions. We all know, even if vaguely, that facts are often more complex than the only available words for expressing them, so that, as a paradoxer once said, "Nature loves a contradiction in terms." Therefore nobody—except one whose view is bounded by formal logic—will seriously maintain that a verbal contradiction can never be justified. In fact a little reflection, or even a little effort of memory, shows that there are at least two ways of possible justification for it.

Of these one is more simple and more familiar than the other. It depends upon the fact that words which have a meaning may be used so that their meaning becomes entirely irrelevant for the time. Proper names are the best known example of this kind of word; a man whose name is Green need not also be green by nature, and no one would suppose there is any real contradiction involved if we assert that he is not so. But what seems to be less well known is that any word may at any time be used exactly as if it was a proper name—may be used merely for reference, and so that its meaning is entirely irrelevant to what is said. It is not only in punning riddles that the question "When is an A not an A?" demands an answer, but wherever the customary application of a name is criticised as clumsy or inappropriate—which, as we have seen,[1] is one of the most important kinds of fault finding. There is thus never any self-contradiction in saying that A is sometimes not A, or that a particular case of A is not A, if we mean merely that something which is called A is wrongly (or even misleadingly for a given purpose) so called. In all such cases the use of the name as "subject term" is quite independent of any meaning it may have when used as predicate. And a simple test of the justice of this excuse for an apparent contradiction is found by asking whether the assertor is content to put "alleged" or "so-called" before the reference name, or to adopt another name in place of it. But most people have the sense to understand such statements and to avoid raising so feeble and wordy an objection. If there were any harm in this kind of merely verbal self-contradiction, it is plain that no mistaken application of a name could ever be corrected. We could not, for instance, intelligently ask whether Shakespeare's plays were written by Shakespeare or not. Every advance, or supposed advance of knowledge involves the judgment that some so-called A was not rightly so called.

The second excuse, however, goes deeper, and there seems no reason to expect it will ever cease to cause perplexity. It depends upon the old line-drawing puzzle which pervades the universe as conceived by means of descriptive names. The lines drawn by language and thought are necessarily sharper than those that are found in Nature, so that words and notions fit things only as ready-made boots fit the human feet. Just as there will always be feet that come between any two sizes, so there will always be cases in Nature that come between any two contrasted names or notions—say A and B. It may thus happen that each of the two opposite predicates, A and B, has as much to be said for it as the other, and that either without the other is one-sided. Each then corrects the defects of the other, and so the two apparently contradictory statements can be harmonised. In such cases, therefore, the contradiction is on the surface merely —a matter of words—and the statement can be interpreted as having a consistent meaning. When we come to consider the difficulties of distinction in Chapter VIII. we shall find that this source of confusion is so widespread that there is no possibility of fixing a general limit to it; except in the purely abstract sciences the contrast between A and not A holds good only so long as it can be justified by reference to a special purpose. The difficulty, therefore, is to find (in real life) any examples of self-contradiction which everybody can accept as undeniable cases of it. At p. 192, two were given which seemed likely on the whole to appeal to the reader; but he is by no means asked to accept them as beyond criticism. If he chooses to imagine contexts in which the expressions would fail to be contradictory, I could only welcome the depth and subtlety of his logic. There always may be such contexts, and in disputes it is extremely common to find that one party thinks of them while the other does not. That is why people differ in regard to the value and meaning of such expressions as "peaceful blockade" or "undenominational religious teaching." There is no off-hand way of making sure that what seems to us self-contradictory nonsense will seem so to every one else, or that those who do not agree with us are wrong.

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[1] §§ 20-22.

There are common phrases in use for indicating in a general way the conditions under which a thing may truly be A and not A at once;[1] as for instance that it is A in one aspect but not in another, or that it is A for some purposes but not for others, or that it is literally A but virtually something else, or that its quality of A-ness is not steady and persistent but depends on accidental circumstances which are hard to distinguish from its essential nature, since they are always present in greater or less degree. By adopting any of these lines of defence the assertor takes the same position as if he had admitted a charge of verbal ambiguity and proposed to do his best to remedy it. When the defence against the charge of self-contradiction takes this line the effect of it is to raise a new set of questions. The question originally was, "Which of the two inconsistent statements, "S is A" and "S is B" do you intend to abide by?" The answer is "Both, because I can explain how to reconcile them." And the objector's rejoinder, "Then by all means do so," opens up a whole series of questions about the facts concerned.

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[1] See also pp. 110, 144.

CHAPTER VII

BEGGING THE QUESTION

§ 29. "*Begging*" *and* "*Raising.*"

BEGGING the question, or, in more pompous terminology, *petitio principii*, is one of the few technical names of fallacy which are still preserved in occasional use as accusations against an opponent, and there is a wide range of possibility as to what may legitimately or reasonably be meant by it. On the one hand we find some who would restrict its application to cases where one of the reasons given for a conclusion depends on the truth of the conclusion itself, or even to those only where one of the premisses of a syllogism does so. On the other hand, we find others who would extend its application to a length which has never yet been precisely indicated, by connecting the fallacy with underhand or concealed assumption, as opposed to the kind of assumption which admits its own assumptive character openly.

That there is this difference among the ways in which assumptions are made no one would dispute. Some people assert things dogmatically[1] which other people assert as subject to correction. And most of us, I imagine, would also agree that it is an important difference, and specially important in regard to the question whether a given argument is a tricky one or not. For what room is left for a trick of any kind when the assumptions which an argument makes are openly put forward? So used, an assumption is not an attempt to gain false credit; it is a challenge. It says in effect, "This is my opinion. Do you dispute the truth of it? and if so, in what way do you think it mistaken?" There might be some point in despising such an arguer as half-hearted or not knowing his own mind; but to say that he is begging the question would be absurd. If he is begging anything, he is begging to have his possible error corrected; if he is doing anything to a question, he is raising one of the subsidiary questions on which—according to his view—the question at issue depends.

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[1] To assert anything dogmatically is to pretend that criticism of the assertion has no standing ground, and is therefore to attempt to hide any possible weakness there may be in it. When Galileo maintained that the earth goes round the sun, he fully believed it and yet was willing to treat it as a disputable question; but when Pope Urban VIII. and his cardinals maintained that the earth stood still, they shut their ears to the arguments, and said their view was only disputable by any one who chose to be burnt alive.

And yet it is far from certain that the formal logician, as such, has any means of recognising this important difference. It is rather the man of common sense to whom the point is obvious. The late Professor De Morgan, it is true, in whom both common sense and formal logic were strangely combined, managed to see it. In his large book on Formal Logic[1] he notices that many people have a habit of wrongly accusing an opponent of begging the question the moment they are able to see that his reasons, if admitted, would establish his case; and we have all, no doubt, experienced this kind of treatment in a dispute. It is easy to explain to a man of common sense in such a case that he is bringing the accusation wrongly, since all we are doing is to *raise* the question whether the reasons can be disputed. But there are difficulties in the way of explaining this to a formal logician, unless he happens also to have De Morgan's sturdy qualities.

These difficulties seem to arise chiefly out of the formalist's habit of taking the words of a statement as *being* the assertion, instead of as merely indicating (more or less decisively) what assertion is intended. When the habit has become ingrained in us we feel—if we are sufficiently consistent—that we have no right to go into speculative questions about the speaker's intentions or motives. What there may be at the back of his mind, we say, is no concern of ours; *there the assertion is*, and if our opponent now tells us he did not mean it as an assertion, why did he not keep silence? He should learn to "mean what he says"[1] and to have the courage of his opinions. Either he means to assert that all X are Y—and then it is clear that he cannot possibly know this unless he knows that the case S, which is admittedly a case of X, is Y; which is precisely the question in dispute—or else he does *not* mean to assert that all X are Y; and then it may be asked, Where is the major premiss for his syllogism? The convenience of this way of treating an opponent is obvious to the meanest capacity. Whichever horn of the dilemma he prefers his argument is wiped out of existence.

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[1] P. 255.

Of course it would be unfair to formal logicians if I were to hint in any way that they *habitually* use this method in dealing with their opponents. On the contrary, because they are human they are inconsistent when their common sense drives them to forget their logic. Besides, it is pretty obvious that they cannot often find opponents against whom this simple trick would be successful. What is meant, therefore, is only that they are in the unfortunate position of being pulled two opposite ways. Their logical principles and their habits of study lead them at times[1] to think that question-begging can somehow be detected without going behind an arguer's words, or enquiring into the intention with which his statements are put forward; their common sense and humour tell them that the same form of words may be used by one man to raise a question, and by another to pretend that the question is settled.

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[1] Dr. Schiller has some useful comments on this phrase, in *Mind*, N.S. No. 73, p. 41.

This division of the house of formal logic against itself is partly exemplified by the perpetual recurrence, in the text-books, of remarks—often curiously perplexed—on the old puzzle as to whether the syllogism itself is a *petitio principii.* Those who understand the difference between begging and raising a question find no puzzle here. They are able to distinguish between a right and a wrong *use* of a syllogism, and they see that a question can only be begged by a syllogism when doubts as to the truth of the premisses are denied a hearing. There is no covert assumption in asking whether the person who disputes a conclusion disputes also one of a pair of premisses which together contain it—else to ask a question would be the same as to answer it. The difference between Mill's treatment of this problem and that of some recent text-books[1] helps to show what an advance there has been of late years towards introducing practicality into our logic. Mill, though he was one of the pioneers of the movement, was greatly hampered by the weight of the then prevalent formalism.

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[1] At other times, again, they cut the knot by declaring that *petitio principii* is outside the domain of formal logic.

One thing that tends to keep alive the habit of taking the sentence as being the assertion is the desire to find a way of nailing fallacies definitely to the counter. We dream of being able to say, with all the authority of logic, that such and such an argument plainly contains such and such a fallacy. The desire is natural and excusable enough, but the notion that it can as a rule be accomplished in any off-hand way, by merely inspecting the words used in an argument, belongs to an older and simpler world of thought than ours. It fades away in proportion as we come to understand that it is meanings that arguments are made of, and *that meanings are only doubtfully indicated by the words employed.* As we have seen in Part I., there is no royal road to the discovery of what precisely is wrong with an opponent's argument. The discovery is often only arrived at gradually, even in those happy cases where we do ultimately make it. What we can always do is to *suspect* the presence of a given fallacy, and to seek for clearer indication of it. But to fasten on the words of the argument and say confidently that our opponent is begging the question, or is using an undistributed middle, or is arguing from *post* to *propter*, or is taking *secundum quid* for *simpliciter*, or whatever the name of the supposed fallacy may be, is to put ourselves in a needlessly weak position. Indeed, the charge of begging the question is a peculiarly difficult one to substantiate. However shrewdly we may suspect that the reasons would not be accepted as true unless the conclusion had been first assumed true, it is well to make sure of that before bringing the accusation. For if it happens that the assertor can defend his reasons without making them dependent on the conclusion, the accusation is at once found to be hasty and foolish. The assertor always has an easy answer in such cases, namely, "My reasons are not put forward as beyond your criticism; dispute them by all means if you can." Then the question changes, and a clear issue of fact emerges which can be dealt with by the methods examined in Part I. And apart from this source of weakness, the confident accusation of actual question-begging goes beyond what is necessary; the important thing is not to convince an opponent of having in the past committed an argumentative sin, but to prevent his gaining now or in the future the advantage which the trick would give him; and that can always be managed by the soberer method. Here, as in other cases, the best use of the technical name of the fallacy is as a guide to ourselves in making a tentative attack—to hold before us exactly what it is that we suspect. And on tactical grounds it is better to drop technicalities in a dispute, as far as possible, and to use everyday language when we can. The technical name of the fallacy never really matters. What does matter is that an arguer should not be allowed to take anything as indisputable so long as we can find good reasons for disputing it.

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[1] *E.g.* Mr. Boyce Gibson's *Problem of Logic*.

§ 30. *The Simpler Modes of the Fallacy.*

When we suspect a begging of the question, what we try to do is to catch the arguer "reasoning in a circle." The typical form of circular argument is where each of two statements is claimed as proved by the help of the other—as in the old and often quoted[1] example where the existence of God is supported by the authority of the Bible, while the authority of the Bible is supported by the fact of its being God's word. In such cases all that is necessary is to set the two statements side by side and ask which is supposed to be known before the other. If the answer is that both are known simultaneously, then the relation between them is confessedly not that of a conclusion and its reasons, but both together form an assertion, and the question remains unanswered *why* they should be taken as true. The example quoted is, no doubt, rather a gross and simple one; as a rule the difficulty for the objector consists in digging out the two mutually dependent statements from a mass of verbiage and setting them side by side. The strength of the objector's position, however, consists in his merely wanting to make sure that the fallacy is *not* committed. If this line be taken no harm is done by asking the question, and a refusal to answer would look suspicious.

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[1] There is no lack of orthodoxy in recognising this argument as fallacious. It is condemned by Archbishop Whately, and again, so recently as 1889, in the Stonyhurst Manual of Logic, by Father Clarke, S.J.

A still more obvious form of circular reasoning here deserves a passing mention, though it has not much practical importance, namely, where an assertion is supposed to be proved by a re-statement of it in other words. It has long been the fashion in text-books of logic to notice that this is a practice which the existence of synonyms renders possible; as if—to invent an absurd example—we were to attempt to prove that Cromwell was *bold* by means of the fact that he was *audacious*. But experience of actual arguments leads me to doubt whether any instances of this trick are to be found where the object is to prove a disputed statement.[1] Certainly they are common enough where—as in the old example about opium producing sleep "because of its soporific virtue"—the object is to give an explanation of an admitted fact when you are not in a position to do so. Puzzled parents every day give this sort of explanation to inquisitive children. But we are here concerned with the sham proof of disputed conclusions, and if we try to imagine this being done by means of synonymous words we cannot get any reality into the examples except precisely where the fallacy is that of insufficient evidence rather than of begging the question.

For any so-called synonyms are either obviously or else doubtfully the exact equivalents of each other. If they are obviously so, then the absence of real argument is obvious also; while if they are doubtfully equivalent the objector naturally admits one form of words without admitting the other. If, for instance, "bold" and "audacious" are taken to mean exactly the same thing, then why should the objector, having already disputed Cromwell's boldness, admit his audacity? If, on the other hand, they are taken to mean different things, then the fallacy of supposing the audacity to prove the boldness is not that of circular reasoning but merely of insufficient evidence; the required links between "audacity" and "boldness" are missing.

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[1] One possible exception should be noted, namely, where the argument is merely *ad hominem*; *e.g.* "You dispute the predicate 'bold,' but you have already admitted the predicate 'audacious.'" This leaves the objector free to explain the difference as he regards it.

The truth seems to be that these cases are not at any rate examples of serious question-begging. If they occur at all they are examples, rather, of an extreme and unusual kind of confusion as to what constitutes an argument. Along with them we might class such reasonings as that the motor car is not to be blamed for the cloud of dust because it does not "create" the dust it raises; or that the ancients were better builders than we are —"Find, if you can, even a single instance of a modern building which has actually lasted as long as the ancient ones." Begging the question seems too solemn a name for arguments of this kind; they stand outside even the slackest notion of serious dispute.

§ 31. *The Extended Notion of the Fallacy.*

The above-mentioned coarser ways of begging a question, even if we allow that some actual examples of them may be found, are of less interest in the application of Logic than the subtler and therefore more delusive forms of the fallacy. And that is a sufficient excuse for extending the notion of "begging the question," by making it include any kind of argument which gets part of its apparent conclusiveness from a concealed or even an *unconscious* assumption that the conclusion admits of no doubt. As to the difference between deliberate and unconscious concealment of assumptions, the only importance this can be said to have (apart from the moral judgment involved) lies in the fact that, generally speaking, argumentative tricks are performed more convincingly when the arguer is innocent of any clear intention to deceive. To most of us sufficient confusion of mind to enable us to beg a question innocently comes without effort. All we need do is to give free rein to our prejudices, to prefer hot-headed assertion to cool enquiry, and to embody in the form of an argument our refusal to look at objections that are raised.

Indeed the word "prejudice" itself reminds us of a familiar example. Not long ago it used to be assumed very generally that an "open mind"—a mind without bias or prejudice—was the great desideratum in the search for truth. But since the influence of our past knowledge on our present knowledge[1] has begun to be more clearly recognised, and especially since it has been recognised that nobody ever starts on any enquiry with a mind like a blank sheet of paper, and that an absolutely candid mind would involve the absence of any intelligence at all, the distinction between an open and a prejudiced mind has gradually changed its reference. It no longer refers to the presence or absence of previous ideas on the subject of enquiry, nor even to the *quantity* of ready-made judgments which enter into the composition, to the supposed detriment of its perfect purity; if the distinction is to mean anything at all, it now has to refer to the temper of the enquirer's mind, his willingness to consider the evidence, and to the *quality* of the "previous knowledge" which is available for the enquirer's use. "Prejudice" is applied only to previous knowledge which is believed to be erroneous. And hence, to refuse to entertain a suggested doubt as to the character of what claims to be "knowledge," is to beg the question whether such supposed knowledge is "prejudice" or not.

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[1] See § 14, and p. 299.

Under this conception of the fallacy, then, to beg a question is simply to slur over, in a dispute, any doubts which an opponent may be asking us to consider. Naturally the ways in which this may be done are extremely various, and all that can here be attempted is to look at a few of the commonest of them. One of these we have already discussed in § 26, and have incidentally referred to also in other passages. Another, equally common, may be found in the use of an analogy *as argument*—*i.e.* the use of an analogy as if no question could arise whether the so-called analogy is itself above suspicion. Two cases, S and S̶, are (let us suppose) obviously alike. S̶ is admittedly X, and when the man who asserts that S is X finds his assertion disputed he refers to (and seems to rest his case upon) the obvious likeness which really exists between S and S̶. Now, obvious or striking likeness is, as we have seen,[1] not necessarily sound analogy; in fact, no false analogy can mislead us except through our taking the likeness for more than it is worth. Hence, whenever an analogy is used in support of any conclusion the pressing question is whether the likeness, however obvious, does or does not amount to a sound analogy. Case S and case S̶, in spite of any amount of likeness, must have *some* points of difference, and the question whether such difference does or does not prevent their both being X has to be faced and examined before the conclusion is proved. The extent of the assertor's unwillingness to face this enquiry is the measure of the extent to which he is begging the question.

A special branch of this trick of using an analogy to hide a weak point in an argument is what Bentham called the use of "Question-begging epithets."[1] As we saw in § 4, an analogy and a class-name stand on exactly the same footing as regards the risk of error in application. And to slur over that risk of error—to take advantage of other people's ignorance or forgetfulness of it—has, if successful, the same effect as any other successful begging of the question. Bentham's examples of epithets are drawn from rather a narrow field, and may tempt a careless reader to imagine that the trick occurs only in clap-trap political oratory of the most blindly conservative kind. But, in fact, the possibility of using words in this manner is as wide as the use of any words as predicates. For it is the same as ignoring a word's risk of ambiguity; and that risk, as we have seen, attaches to all descriptive words indifferently.

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[1] § 4.

There seems to be no harm in keeping these two branches of the fallacy separate so long as we remember their essential kinship. But the usual method of dealing with either of them when we meet with it in a dispute—dealing with them so as to avoid the downright technical accusation of begging the question—is so nearly the same that there is not much point in separating them. When we find an opponent using an analogy as argument, what we usually do is to substitute an opposite analogy, as having an equal claim to acceptance; and when we find a question-begging epithet used, we substitute another question-begging epithet with an opposite effect. It is just as easy, for instance, to call the House of Lords a "bunker as to call it an "obstacle." The object in both cases is to show that both of the opposite conclusions are *equally* plausible if we rely on loose analogy or an uncritical use of words. The method is that of parodying a bad argument by an equally bad (and equally good) one, the defect of which our opponent may be more ready to see.

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[1] These properly include not only what are commonly called epithets, but (since any class-name may be ambiguously used) every class-name—noun, adjective, verb, or adverb—which conceals an important assumption.

It is a possible view, and one that I will not here try to dispute, that the use of analogy as argument covers the whole field of the extended notion of question-begging. For since all description involves a choice among different possible analogies, any unconscious disturbing influence our prejudices may have upon our application of descriptive names is an influence which leads us not only to accept false analogies as true ones, but to use these false analogies uncritically as parts of an argument. The chief drawback I would suggest to this view is that it tends to make question-begging identical with error in general; and however true that may be philosophically, it seems more convenient to give even the extended notion of the fallacy a smaller extent than this. I am, therefore, inclined to limit it to dogmatic error as contrasted with the error that is freely open to correction. As we saw above,[1] dogmatism is constituted neither by firm belief nor yet by downright assertion, but by the refusal (or inability) to listen to suggested doubts. What this comes to, therefore, is that question-begging in the extended sense, which makes it a really effective mode of fallacy, occurs just so far as any attempt is made on the part of either disputant to prevent question-*raising*. Not only, therefore, the attempts to stifle a question about the application of an "undeniable truth" would come under it, but also the kindred attempt[2] to use the meaning of a name to stop the raising of a question of fact. Here is another instance of the impossibility of giving one name exclusively to a case of fallacy. The last mentioned forms of *petitio principii* would come almost equally well under the designation *ignoratio elenchi* (or misrepresenting the point at issue). For as we have seen[3] it is never the "truth" of an axiom, but only the particular application of it, which is really denied; and, as we shall see,[4] the meaning that is given to a name is never more than a postulate for the sake of getting the fact

[1] P. 202 *n*. [2] Pp. 143, 170. [3] Pp. 109-11. [4] Pp. 261, 270.

stated.[1] An example of this may be found in an argument which was used by Agassiz to prove that biological "species" are immutable. Not being able to rid himself of his preconceived opinion that they are so, he imported this opinion into the *meaning of the word* "species," and then claimed that the question whether (immutable) species are mutable was a nonsensical question and, therefore, could not be raised.[2]

However, it is philosophers rather than scientific men who are specially liable to beg the question by verbal confusions of this sort, and there are many similar philosophical oversights which would seem almost incredible to common sense if they were not disguised in technicalities which are troublesome to interpret. A rather more obvious instance of them than usual is referred to at p. 309. As for the less obvious ones, the amount of explanation they would require renders them unsuitable for exposition in this book,[3] but it may be said of them generally that they all arise out of *distinctions used in a context.* Where one party, in philosophy, attempt to criticise a distinction as used, there is usually another party who—because such criticism is new to them—fail to free themselves from the habit of assuming that the distinction is valid, and so use the distinction itself in their attempts to show that the criticism has no standing ground.

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[1] See also pp. 239-41.

[2] See *Life and Letters of Chas. Darwin*, vol. ii. p. 333.

[3] I may, however, refer to the account given of one of them in *Mind*, N.S. No. 53, pp. 43 ff. In this case the habit of ignoring the distinction between an empty statement and a statement which has meaning, prevents certain philosophers from understanding the criticism, arising out of it, of the distinction between "accepting" or "rejecting" a certain formula which professes to make an assertion.

But the influence of an uncriticised distinction is by no means restricted to philosophical disputes, though it is there most openly confessed. In every kind of dispute the same situation is liable to arise, even if more obscurely. For all our judgments, in the most everyday matters, get their point from distinctions that are assumed as trustworthy;[1] and when an objector finds fault with the judgment on the ground of some defect in the distinction, our habit of freely and carelessly using the distinction naturally hinders our conversion to his views. It is not here meant that the tendency to accept and use a distinction blindly is itself a begging of the question, but that it becomes so when it leads us to regard all criticism of the distinction as quibbling.

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[1] That is to say, if there is any point in the judgment that S is X, or in the judgment that all X are Y, such point depends upon the assumed soundness of the distinction between X and not X. In the next chapter this point will be further explained.

CHAPTER VIII

DISTINCTION AND DEFINITION

THE group of perplexities now to be noticed are among the commonest of all, and in an argument where a hitch occurs it is generally worth while to make sure that they are not somehow to blame for it. They are especially liable to arise in connection with the kind of ambiguity that is due to confusion of two sorts of X, but in all subtle appreciation of the difference between facts nearly alike, or of the likeness between facts obviously different, mistakes about the nature of distinction and definition are constantly causing confusion.

It is not possible to separate the two subjects, Distinction and Definition, entirely from each other without misrepresenting both of them. The relation between them is a complex one, and may by way of introduction be briefly indicated as follows: a "distinction" is drawn, or found in common use, between two terms, A and B (*e.g.* "civilised" and "savage"); while a "definition" is the explanation that is given, or accepted, of one term A (*e.g.* "civilised"). Thus to define one term, A, as against another, B, is to explain the distinction between them. It follows, therefore, that the clearness of a distinction is another name for the definiteness of the terms distinguished; also that doubts about the definition of a word may often be easily and simply viewed as doubts about the clearness of a distinction.

§ 32. *The Nature and Use of Distinctions.*

Distinction always involves the *recognition of difference*; a distinction between A and B recognises a difference of application between these two terms; and so the familiar phrase, "A distinction without a difference," when intended, as it usually[1] is, to set an opponent right on a matter of fact, cannot be taken as meaning literally what it says; for since there is always difference of some sort—important or unimportant—between any two things or classes, the recognition of it in any context always implies an opinion that the difference is important. What the phrase really means, therefore, is that an unimportant difference has been taken for an important one; a mistake which, as we have seen, often happens. The charge of making a distinction without a difference does not arise except where difference is supposed to be claimed—where the names are supposed to have a different reference and to set two things (or groups of things) in contrast to each other. And then the charge means no more than that the difference is unessential and the resemblance essential.

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[1] A different usage of the phrase is, however, occasionally met with, namely, where it is intended as merely objecting to a solecism in the use of language, on the ground that the "proper" (*i.e.* customary) use of the words A and B is to take them as precisely synonymous. Here certainly the phrase retains its literal meaning, and expresses a kind of objection which, though not of a logical nature, may have some literary value.

It follows from this that the primary use of distinctions is to prevent important confusions into which we might otherwise fall; to prevent the application of the name A to cases which should rather be called B. The excuse for making or using a distinction between A and B is that people are inclined not to see how important the difference between them is. Distinctions, therefore, are part of the machinery by which, as we have seen, ambiguity and error are combated. Even the comparatively harmless kinds of ambiguity overlook an important difference, though not a subtly concealed one, and the (often obscure or neglected) distinction between AX and BX is, as we have seen, one of the chief instruments of the progress of thought away from vagueness and error.

In other words, a distinction is important only so far as an argument is founded upon it. Importance, as we saw (p. 127), does not exist at large, but has some purpose in view. Something must *follow* from the recognition of the difference between A and B if that difference is to be worth recognising. Thus it is always in some argument founded upon the difference that the importance of a distinction is proved. And all arguments are to this extent "disjunctive"[1] arguments.

§ 33. *The Defect of Distinctions.*

The one root of the difficulty which distinctions are liable to create consists in what may be called their "fast and loose" character, which stands in the way of our knowing exactly how far we may trust them. A distinction can only be *used* by virtue of the assumption that we may trust it as firm and clear; but in very many cases this assumption can be shown to be unwarranted. We often have a choice between using some loose or vague or rough[2] distinction and using none at all;

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[1] In the old logic this name was restricted to a special verbal form of syllogism whose major premiss was a "disjunctive proposition." But we have here nothing to do with forms of sentence, only with the fact that there is no point in calling a thing A rather than B unless some difference is supposed to follow from our choice between the alternative names.

[2] These epithets are all commonly used to express the same defect.

and an opponent can easily raise telling objections to either course.

That our security in using distinctions is a precarious one was discovered long ago,[1] but was brought home to the modern world effectively when Darwin produced his wealth of convincing details showing the unsatisfactoriness of the lines between one biological species and another. This negative notion has, as we all know, taken firm hold in spite of much opposition, and in spite of the fact that certain other more positive parts of the Darwinian theory have now been more or less superseded. But it has not only taken hold as a truth in biology; no one can deny, though many may deplore the fact, that there has been in the last half-century an increasing general readiness to find fault with hard and fast distinctions in all departments of thought. So that the question whether this or that distinction between A and B is worth as much as we have been accustomed to assume is constantly being raised and creating opposition between two parties. There is generally one party whose vision of the value of a distinction tends to blind them to its defects, and another party in whom the partial vision and partial blindness take the reverse direction.

The common non-logical way of dealing with this difficulty is to trust to our own good sense in taking distinctions for what they are worth; and so far as we really possess good sense this must be an excellent method. But since good sense is a quality which admits of degrees, the question sometimes arises whether our good sense, so used, is better or worse than that of some one else who disputes its value in the particular case. And if logic is to give any help when applied to disputes, this is evidently one of the cases in which logic should have something to say. It can, for instance, enquire generally about the nature and the effects of looseness in a distinction.

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[1] At least as long ago as the time of Heraclitus, about 500 B.C.

And, first, we may note that where two things or classes, A and B, are distinguished from each other, and thus treated as importantly different, looseness in the distinction is another name for the existence of an intermediate region between A and B—a region in which a group of cases, large or small in extent, cannot be truly said to belong to either class definitely and exclusively. We then sometimes conceive of a third class, C, as coming between A and B—as when we speak of the middle class between rich and poor; but we are often content not to do this, and merely to say that the exceptional and puzzling intermediate cases belong to both classes at once; for example, we do not commonly recognise a special class between the knaves and the fools, but rather say that Smith is both knave and fool. Sometimes, again, we prefer to say that the exceptional cases belong to neither of the opposed classes, and, in fact, to no recognised class at all; they are "neither fish, nor flesh, nor fowl, nor good red herring." These different ways of expressing the difficulty are mainly a matter of choice, or of the accidents of customary phrasing. Under all three forms of expression the trouble referred to is the same; there is an intermediate region between the two opposed classes, and the distinction, therefore, cannot safely be used as if that intermediate region had no existence.

The examples just given may be thought trivial, but even the most serious kinds of distinction may suffer from exactly the same defect. Take, for instance, the distinction between "functional" and "organic" disease. In many cases this may be used safely, but not in all; one reason being that, since a disease that begins by being merely functional may later become organic, there is a range of possible cases in which it is doubtful whether the change has as yet gone far enough to invalidate the use of the distinction.

And it is not only where there is change from A to B that uncertainty of application arises. One of the commonest kinds of distinction is where, on a long scale the whole of which is more or less A, the name A is restricted to the part which is specially or obviously A, and the name B to the part where the A element is less obtrusive, or in a general way more negligible. In the preceding chapters we have made acquaintance with several distinctions of this sort; for example, there was the distinction between simple and complex facts referred to in Chapter II. We saw that though the epithet "complex" in strictness belongs to facts of every kind, yet not only is there great convenience in the distinction, but we could hardly reason at all without using it. Somewhat in the same way as the law presumes every man innocent till he is proved guilty, so arguments assume facts simple until the assumption is shown to be misleading us. We shall presently[1] have to refer to this kind of distinction again.

The next point that logic has to notice is that the difficulties incidental to loose distinctions can only arise when the distinctions are *used*. A distinction—say, that between animal and vegetable—merely contemplated in itself, and without context, can have no effects of any kind in the way of either helping or misleading us; those effects begin only when something is said which makes use of the distinction—as, for instance, when it is said that certain micro-organisms are vegetables and not animals. Expressing this in the most general form, we may say that any looseness or vagueness in a distinction can only matter where some statement is made which treats the distinction as a firm and clear one; and this, we have seen, is done wherever any argument is founded upon the distinction.

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[1] P. 231.

It is only so far, then, as a distinction, through lack of clearness and sharpness, fails to justify an argument which is founded upon it that any fault can be found with its use. Where there exists a doubtful region of application between the terms A and B, so that either name would be equally applicable (or inapplicable) to any cases that come within that region, then *in those cases* the argument will not hold. Of any one of these doubtful cases, we cannot say that because it is A therefore it is not B, for it may be both A and B at once. Similarly we cannot safely argue that because it is not A it is B, for it may be neither.

Another point that should be noted is the temptation to use distinctions wrongly. If a given distinction were purely trivial and nonsensical it could have little if any misleading power. But, without going so far as to say that no such distinction has ever been made, we must all admit that distinctions generally are not of this character, that nearly all of them are valuable for many purposes, and that some are even necessary to thought. What should we do, for instance, without the distinction between the true and the false? A distinction without any value would be a distinction that is never used, and which therefore could never cause difficulty; in fact the difficulty increases in proportion to the general value that the given distinction has. It is *because* a distinction—say, that between good and evil, or that between truth and error—is a valuable one, that we dislike any tampering with it, any recognition of its defects. That, at least, is the noble and respectable side of the temptation—the side we naturally appeal to when we are engaged in a dispute.

The less noble side of the temptation, however, is our human dislike of taking trouble; and the function of an opponent here should be to compel us to guard ourselves against the imputation of this motive—which can only be done by showing that sufficient trouble has in fact been taken. What then constitutes a "sufficient" recognition of both the value and the defects of a distinction that we use?

§ 34. *The Use of Imperfect Distinctions.*

Here, as so often in logical matters, the key is given by observing the different methods followed respectively by the better and the worse kinds of common sense—a kind of observation we are all accustomed to make. Though the results reached by different observers of it naturally do not agree in every particular, there is at least enough agreement to serve as starting-point. For example, even to recognise that the problem is that of taking distinctions "for what they are worth," rather than of judging them by some standard into which the notion of value does not enter, is itself a step in the helpful direction. It prepares us to find that, as in the case of other things that have value—money, for instance—this quality is one that may come and go according to circumstances; that it is not inherent in (or absent from) the distinction *per se*. And when once we have got as far as that the rest is easy. We are then ready to see that the better kinds of common sense in the use of distinctions differ from the worse ones chiefly in the extent to which the context of a distinction—the special occasion, the special purpose for which it is used—is taken into account. The more stupid or clumsy kind of common sense says "A is A, and B is B, and there is an end of the matter," while the more alert and intelligent common sense recognises that what is A and not B for one purpose may be both A and B (or neither) for another. Indeed, as an occasional piece of reflection due to obvious practical needs, the beginnings of this discriminating power may be seen far down the scale of common sense. Can we find any one, for instance, who fails to see that the distinction between accessible and inaccessible places varies with the modes of locomotion we happen to possess? or that of two men possessing the same amount of money, one may be rich and the other poor?

An ordinary everyday level of common sense is in one respect the best field for our present observation, because there we can see everyday purposes in striking contrast with purposes that demand stricter and more careful discrimination. The kind of distinctions noticed at p. 227—distinctions where A and B are points far apart on a scale the whole of which is strictly A—are a case in point. Take, for instance, the common distinction between "theory" and "fact." All fact, we saw in § 16, so far as it is recognised fact, is theorised fact. Of fact entirely free from theory we have no experience; we can speak of it in words, but can form no conception of it. Recognised fact is described fact, classified fact; and in the process of description or classification theory comes into operation. The "essence" of the fact has to be distinguished from its "accidents," the fact itself from what are merely its "circumstances"; and there is no guarantee that our neighbours will not perform this operation differently from ourselves, or that if they do so they are necessarily mistaken.

Since, then, there is no fact known to us into which theory does not enter as a constitutive part, the distinction between fact and theory is valuable only when used for rough purposes. And the most ordinary common sense—when not misled by formal logic—habitually understands this. It sees that the distinction has some rough value, for everyday purposes, in marking off some assertions as more doubtful than others; but it also sees that we cannot use it to argue that a given assertion, because it deserves to be called an assertion of plain fact, can therefore rightly claim to be exempt from criticism—claim to have in it no element of fallible opinion or theory. As soon as our purpose becomes that of enquiring carefully whether the given assertion is true or not, the value of the distinction between fact and theory disappears for the time, and all dependence on it becomes misleading.

There is thus a very general recognition that when we are "speaking strictly" the account that we ought to give of things is often a different one from that which will serve for looser occasions. This recognition logic gladly welcomes and confirms. But it may also go further, and express the matter in a more generalised way. This it can do by means of the notion (discussed in § 19) of the conflict between general and particular *importance.* Importance, we there saw, is always relative to some purpose or purposes, and it does not necessarily follow that what is important for one purpose (or even for many or most purposes) is important for another. The value of a distinction, we have also seen, is its importance for the purpose of an argument; and because it happens to be important for one argument it need not be so for another. Whenever, therefore, the question arises what the distinction between A and B is worth, it can only be answered by reference to the use that is here and now proposed to be made of it. All answers which fail to take this into account are irrelevant answers which can only confuse the issue. As will be presently seen, the temptation to give irrelevant answers is at its worst where the form of the problem is that of giving a *definition* of one of the terms opposed.

§ 36. *Questions of Fact and Questions of Definition.*

Since the defect of a rough distinction consists in the indefiniteness of its terms, A and B, so that we do not see clearly where one begins and the other ends, it is natural to suppose that in definition of the terms a remedy should be found. This supposition is partly true and partly misleading. Definition of the terms A and B may now and then be of service in removing the roughness of a distinction; but it is far from being an applicable remedy in all cases. And our common-sense notions about the value of definition are extremely confused, and are constantly leading us into a false security.

We all know, vaguely, what is the process of defining a term A. In the first place, a definition attempts to give information about the things or cases that belong to the class A—information intended and professing to give us some help in discriminating, on actual occasions of difficulty, between the things that are A and those that are not so. Those of us who have picked up a few logical technicalities know, moreover, that a definition mentions the *genus* and the *differentia* of the class corresponding to the word defined; that it gives the full *connotation* of the word, and in so doing differs from a mere *description*; and possibly also we remember having learnt that a definition must not include a *proprium*, nor an *accident*, nor the term itself which is to be defined, nor any *cognate* of it; must not be in a negative form if a positive form is obtainable; and that it is futile to define *obscurum per obscurius*.

These are sonorous instructions, but they do not help us much when we meet with the real difficulties that belong to the subject of definition. The difficulties may be divided under three heads: our liability to confuse questions of fact with questions of definition; to confuse two different explanatory functions—a statement of the generally accepted meaning of a word, and that of a word as used in a particular context; and our easy-going uncertainty as to the amount of help which a definition professes to give, and can give, in discriminating between cases of A and cases of non-A.

The confusion of questions of fact with questions of definition is one of the chief symptoms of the vice of "verbalism" referred to above.[1] It affects us in very different degrees, and chiefly in subjects that lie outside our professional work, or business, or sports and games; for example, in subjects—such as metaphysics—that tempt us by appearing free from the muddle and compromise and hurry of our active and responsible doings. Still, it is far from being entirely restricted to these soarings and relaxations of the mind.

For example, even in the sober profession of the law, questions of fact are not always easily kept separate from questions of the interpretations of language. What are we to say of the question whether a person accused of libel did or did not act with malice? The law lays down the rule that in some cases malice is required to constitute a libel, and the question whether a given act contained malice or not is treated by the law courts as a question of fact—is left to the jury to settle. Yet nevertheless there does seem to be, in common sense if not in law, some kind of difference between such a question and those that we should all agree to call questions of fact; for instance, the question whether the prisoner actually fired the shot, or whether a particular cheque was signed by a particular person. The question about the presence of malice is rather what we should naturally call a matter of definition than a matter of plain fact; it depends partly on this or that person's use of the word. The conclusion reached as to whether a libel was or was not committed depends partly on the jury's interpretation of the term "malice." Every one would agree that righteous indignation from public-spirited motives is a different thing from malice, but in real life righteous indignation is often mingled with indignation of a petty and personal kind, and the total mixture is hard to classify.

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[1] § 23.

And when we look away from the formalities of the law courts, and think of arguments such as are used on political platforms, or in leading articles, we find that questions of fact and questions of meaning are much more often difficult to distinguish from each other. Acts of Parliament, though not always free from difficulties of interpretation, are specially framed to avoid such difficulties as far as possible. They are stated with elaborate specifications; definitions are carefully given of the chief words employed in them; and every new decision made by a judge helps to define still further and more exactly the sense in which an Act should be interpreted. Contrast with these the principles and generalities which an orator or a leader writer appeals to. In place of the carefully expressed rules of law the appeal is made to sentiments and notions, often of the vaguest kind — equality, freedom, and so on. In all such loose reasonings there is a constant trap for the unwary in the inevitable confusion between questions of fact and questions of meaning. There is nothing commoner than to fancy such notions simpler than they really are, and less open to difference of interpretation. Take, for example, the principle of Communism that the greatest possible "equality" is the chief thing to be desired. Could anything be simpler or more attractive—until we happen to ask what "equality" is? As Rae says: "Is it equality when each man gets a coat of the same size, or is it not rather when each man gets a coat that fits him? Some communists would accept the former alternative. They would measure off the same length to the dwarf and the giant, to the ploughman and the judge, to the family of three and the family of thirteen. This would be clearly not equality, but only inequality of a more vicious and vexatious kind. Most communists, however, prefer the second alternative and assign to every man according to his needs, to every man the coat that fits him. But then we must first have the cloth, and that is only got by labour. . . . The motive to labour, however, is weakened on the communistic system; and if those who work less are to be treated exactly like those who work more, that would be no abolition of monopoly, but merely the invention of a new monopoly, the monopoly of indolence and incapacity. The skilful and industrious would be exploited by the stupid and lazy — Communism is a pure Utopia, and why? Because it misunderstands its own principle. Equality does not mean giving equal things to every man; it means merely affording the greatest possible play-room for the development of every personality."[1]

A more general account of the reasons why questions of fact and questions of definition are liable to be confused with each other may be found in what was said in § 20 about the connection between ambiguity and error. Since, as we saw,[1] all recognised fact is described fact, it follows that the less downright and obvious errors of fact are precisely those where the description is less obviously wrong. In other words, the more effectively misleading errors of fact are those which correspond to some slight lack of precision in the statement, and which therefore give rise to questions of accurate and careful definition. It is largely on this account that so often two people disputing hardly know whether the dispute between them is "a mere question of words" or not. They first wrangle hotly about what they both believe to be a question of fact, and then suddenly and unexpectedly discover, almost by accident, that the whole trouble might have been saved if they had begun with a verbal enquiry.

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[1] From Rae's *Contemporary Socialism*, 2nd edition, p. 184. His comments on the principle of "Freedom," on p. 185, take the same line—that principle also sounds more simple than it is.

That is one result of this common confusion. Another is the attempt, still sometimes made, to prove a fact by reference to the commonly accepted meaning of the word, or—even worse—by a reference to the word's derivation. For example, a "miracle," in its accepted meaning, is an interference with the laws of Nature, and therefore (it has been argued) there cannot be such a thing in the *world of fact* as a natural explanation of a miracle; or again, the word "lunatic" means "affected by the moon," and therefore there is no room for doubting that lunatics are *in fact* so affected. The tendency to use such arguments seriously marks, it is true, a low level of common sense and is seldom met with. In a Court of Law appeal is occasionally made to the accepted meaning of a word, in the hope of confusing the minds of a jury; but as a rule this is one of the sources of error that work best in the dark, and lose power by being made explicit. It is rather in the milder form of undue weight given to a distinction that its best chance of producing confusion lies.

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[1] P. 231.

This, then, is one of the snares against which we must be on guard when we try to correct the faults of a distinction by defining the terms. We cannot cheat the real difficulties which are due to Nature's complexity by declining to see them. That, for instance, we mean by "truth" something opposed to what we mean by "error" does not help us to solve the problem of drawing the actual line between them, nor does it justify logic in declining to consider the nature of error. The problem itself originates in the assumption that they are "somehow" different, and consists in asking precisely how the difference is to be recognised in practice. Even if we could surpass the oratorical powers of Mr. Chadband in his discourse on the nature of Truth our result would be no better than his. An "abstract" distinction does not solve, but only states, the problem how its terms are to be defined.

§ 36. *Usual and Unusual Meaning.*

The second of the three kinds of confusion mentioned on p. 235 is on the whole more difficult to avoid, because it supports our natural tendency to think that ambiguity belongs to a word in itself rather than to a statement in which the word is used. The generally accepted meaning of a word is at best a glorified "dictionary meaning." It differs from the account given by any actual dictionary only in the fact that meanings generally accepted in the time, say, of Dr. Johnson or Webster, may be less generally accepted to-day. Suppose this defect remedied, suppose we had a dictionary giving a complete and accurate account of the generally accepted meanings of all words at the present moment, still such an account must necessarily ignore special departures from the ordinary custom.

A good thing too, some people will say. May we not take it that the generally accepted meaning of a word is not only the most convenient for intercourse, but also represents a consensus of opinion which should not be lightly disregarded? Why should Dick, Tom, and Harry, through their ignorance, or conceit, or carelessness, fly in the face of all the world by creating or adopting fanciful unnecessary variations of meaning? Why should "transpire" be allowed to mean "happen"; "predicate" to mean "predict"; "phenomenal" to mean "extraordinary," and so on? Let us keep the well of English undefiled and look askance at all such pointless innovations.

But it is not difficult to see the irrelevance of this well-meant objection to the use of slovenly language. As such an objection it deserves all respect; only it does not happen to apply to the point now before us—unless it makes the indefensible assumption that *all* departures from accepted meaning are due to ignorance or carelessness and imply a light disregard of educated opinion. To assume this would be to leave out of account that factor in thought upon which all progress depends—the power of recognising that "A" may in a given case not be A. It would have us forget, too, that every newly discovered truth has some effect in changing the hitherto accepted meaning of some word or words. Indeed the counter assumption that it is Dick, Tom, and Harry who lightly make the accepted meanings, and only the men of science and the philosophers who depart from them, would be scarcely any more one-sided and untrue.

No; the point is that the generally accepted meaning, while it should not be lightly disregarded, should also not be allowed to become obstructive to the progress of knowledge, and should therefore at any time be disregarded for good reason shown. And the nature of that reason is now not difficult to see. Generally accepted meanings have both the value and the defect that belongs to generality; they suit many purposes, but cannot provide beforehand for every purpose that may arise as knowledge grows and expands. The reason, therefore, for departing from the accepted usage of a word is that you have something to say which otherwise could not be so clearly said, or perhaps could not be said at all. To raise an objection to your doing this is merely a way of declining to hear or to understand what your intended statement is.

We have the extreme case of this justified unconventional use of language where the statement, judged by the dictionary standard, appears self-contradictory. The absurd expression "a circular square" is often quoted as an example of a self-contradictory predicate, and certainly it is difficult to imagine a statement in which it could have any other character. But, judged by the dictionary standard, "an inaudible sound" has the same defect, and yet that is a predicate to which a meaning can easily be given. Or somebody discovers, let us suppose, that bad air is not really the cause of "malaria" fever, but only a condition that usually accompanies other conditions that favour the spread of the (already existing) disease. Is the discoverer then prevented from asserting, with any meaning, that malaria is *not* directly caused by bad air?

And in general, whenever we feel the need of stretching an accepted meaning a little, so as to cover some case hitherto regarded as adjacent but outside it, the result necessarily has some trace of what from a merely verbal point of view might be called self-contradiction. Hitherto the name A has always been used to "denote" (*i.e.* apply to) a certain set of cases, *x*, *y*, and *z*. I discover what seems to me an essential resemblance between *w*—hitherto classed as a case of non-A—and *x*, *y*, and *z*. Is the fact that all the world has hitherto missed seeing this essential resemblance to prevent me from even raising the question? Is it to be condemned as an entirely nonsensical question, on the ground that *w*, since it is generally accepted as a case of non-A, cannot possibly be also a case of A? If so, how could any new truth ever be established?

The point may perhaps best be expressed by dropping for a moment into the technical language of logic. Logicians, since J. S. Mill's time, have talked of the *connotation* of a class-name as the list of qualities a thing must have in order to belong to the class; and of the name's *denotation* as the list of things which, having these qualities and because they have them, do in fact belong to it. What is often forgotten, however, by those who use these phrases, is that though the denotation of a name should thus be entirely secondary to, or dependent upon, the connotation, yet so to conceive it is to ignore one of the chief ways in which changes in the connotation take place. There are names—*e.g.* "triangle"—which have never perhaps changed their connotations; but there are also innumerable cases, and especially those in which precise definition is not easy, where more or less change does occur, the chief source of it lying in slight extensions or restrictions of the denotation. The name gets extended to adjacent cases, or it becomes convenient or customary to narrow down the meaning by subdividing the class, and until that process is complete—until, that is, the progress of knowledge comes to an end—there is a struggle between the old and the new meanings, between the conservative and the reforming element in the use of language. A dictionary tends to be a conservative authority; poetry, science, slang, ignorance, and slackness of usage are among the influences which lead to change; and of these science—increase of knowledge—is not the least important.

Language is full of examples of change of meaning through extension to adjacent cases. Such extensions are indeed almost forced upon us by the fact that when a name is first applied to a class of things we often know less about the things so named than we afterwards come to know. We gradually come to see more and more aspects of them, so that what first struck our ancestors as the leading features of the class seem to us comparatively unimportant details. As this or that quality loses or gains value through our wider experience, and so comes to be thought unessential or essential, this or that case possessing the quality drops out of the denotation of the name, or is added to it. Thus a "soldier" is no longer necessarily a man who is *paid* for his military service; the crew of a steamer are admitted into the class of "sailors"; and if the latest locomotive invention comes to be called an air*ship*, we shall find the extension natural. Restriction of a class is a less common occurrence, but that it does occur the word "idiot" (now no longer applied broadly to those who stand outside public affairs) may suffice to show; and again the word "sophist," which would not now be held to include every teacher of wisdom. And, generally speaking, words which have come to be used in uncomplimentary senses illustrate this restrictive change of meaning: "villain" and "pagan" are commonly quoted examples.

It appears, then, that in spite of the surface dependence of a word's denotation upon the connotation, the real relation between these two aspects of a word's meaning is not so simple. They may be regarded as two different kinds of meaning, with a struggle intermittently going on between them for predominance; a struggle which leads to perpetual compromise, never to a final victory. It is only when we neglect the influence of the denotation upon the connotation that we can say that the latter is the aim or intention of the word, while the former represents the way in which the intention has hitherto been carried out. Since, in fact, the original[1] aim does suffer some change as the process of applying the name goes on, there is a never-ending source of difficulty in fixing with precision the connotation of the word at any given period. Words normally have shifting connotations, and must suffer some change of meaning as long as progress in knowledge and in material inventions goes on.

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[1] The word "original" is here used only to save circumlocution, and not as implying that we can always get back to the origin of words, however easy it may be to trace them to some dead language, or even to an Aryan root.

As regards this kind of confusion, then, there are two points chiefly to remember. First, it is a mistake to assume that we can always discover the meaning of a statement by looking out in a dictionary the words of which it is composed—even if we had an ideally perfect dictionary to consult. The dictionary definition does not even give us a clear and unmistakable account of the present usage, let alone the present intention. But if it did tell us the absolutely correct usage, or in those cases where it comes nearest to doing so, it would still be giving information which might entirely fail to meet the difficulty expressed in the demand for a definition. After all, the meaning of any statement is a matter for the speaker to declare, even where, judged by common usage, it seems to be self-contradictory and so to have no meaning at all. There are two quite different kinds of difficulty in putting the right interpretation on a statement, and a dictionary can only remove one of these, and by far the less important one. When you meet with a statement containing an unfamiliar word—say, the word "parallax," or "phanerogamous," or "brigantine"—and when you understand all the rest of the statement except that word, then as a general rule the dictionary will help to make the meaning clear. But when the difficulty is caused, not by a word being unfamiliar, but by its being used in a certain context, then the best dictionary in the world is, for your purpose, of no use at all. The nature of every dictionary is necessarily such that it entirely leaves out of account all doubts about meaning which are of this second kind. The most that a dictionary can do is to tell us the meaning of a word in those cases where the context in which it is used is *not* such as to make the meaning doubtful.

Secondly, the request for a definition—for the drawing of a clear line between A and not-A—is not the same thing as a request for a broad general account of the meaning of the word A. As we saw in Chapter VI., the former request involves a claim to know the usual or accepted meaning, and a suggestion that an important difference is concealed by it. The accepted meaning is asked for only by those who thereby confess their mere bewilderment, who complain that the word is "Greek or Hebrew" to them. This latter request therefore is, in effect, a request for a translation[1] of the word, and by calling it so we should often avoid this otherwise natural confusion. To want a word defined is to want its boundary clearly marked out, and no one ever wants a boundary marked out unless he already has before him the map or plan on which to mark it. Boundaries are not marked *in vacuo*, but to limit precisely something the general extent of which is roughly known. When the definition of "Truth" is asked for—or, on a lower level, the definition of a "Jingo" or a "Little Englander"—can we imagine that the person asking has no idea at all of the meaning of the words? The question how a word should be defined always implies (1) some previous acquaintance with the rough meaning of the word; and (2) some view, even if a vague one, of a context in which the ordinary verbal explanation is not sufficient to avoid an ambiguity.

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[1] Logicians have hitherto called all such rough or imperfect explanation of a word "description" rather than translation, and Mr. Boyce Gibson, in his valuable book *The Problem of Logic* (p. 17), declares the former term to be "simpler and more satisfactory," though without giving his reasons for thinking so. My reasons for preferring the word "translation" are given on pp. 252, 270.

§ 37. *The Dividing Line.*

The third source of difficulty about the nature and function of definitions refers to the amount of help which a definition professes to give, and can give, towards drawing the line clearly between A and not-A. The old logic recognises (in the abstract) a distinction between a perfect definition and an imperfect one, preferring to call the latter a "description," the difference being that the former gives the whole of the connotation of the word, while the latter gives at most only a part of it. Now a knowledge of the whole of the connotation—if such knowledge could be given—would no doubt be decisive under certain conditions. If *x*, *y*, and *z* are all the qualities essential to A, and if at the same time there is no doubt about the meaning of the names *x*, *y*, and *z*, and if we knew all the facts about any particular case, then we should certainly be able to put that case clearly on one side or other of the dividing line.

These "ifs," however, may well give us pause. We have already seen how fluid a thing connotation is, how the inevitable progress of knowledge extends it in this direction and clips it in that direction, in spite of all that conservatism can do; how illusory, therefore, is the notion that every word has some *one* "correct" connotation, to be fixed by authority or even to be discovered by genius. But suppose that by a miracle A's correct connotation had been discovered, should we not require further miracles to guarantee absence of doubt as to the meaning of the *x*, *y*, and *z* into which the notion of A is analysed, and again as to the facts of the particular case? Thus the claim that a given definition is sufficient to meet all doubts is more easily made than justified.

Admitting, then, that such claims are in strictness always questionable, what follows? It is clear that if all imperfect definitions are to be called descriptions our best attempts at definition must deserve this inferior name. But when logicians speak of the process as description they are evidently thinking, not of words and their meaning, but of things and their nature or qualities. We "indicate" or "explain" the meaning of names; what we "describe" are the things that are named. Nothing is gained by forgetting the difference between these two operations, and to think of the one is only to take our thoughts away from the other. What we are now concerned with is the explanation of names carried as far as it can be carried towards the discrimination of A from non-A. It is better, therefore, to think of imperfect definition as the more or less vague indication of the meaning of a name, rather than as the more or less incomplete description of the things.

Let us first ask why there is any need to carry discrimination as far as we can. It must be remembered that a definition always attempts to make clear a distinction, only that instead of this being a distinction between two things or classes (A and B), it claims to be a distinction between one thing or class (A) and everything else in the world, including those things or classes which are most likely to be mistaken for A. In many cases of a distinction between A and B (*e.g.* courage and cowardice, hot and cold, man and ape), the opposed notions are in most of their applications in no danger of being confused; it is only the fringe of them which is indefinite. But a moment's reflection shows us that it is just this existence of an indefinite fringe which initiates the request for a definition. We do not, for instance, ask how to discriminate courage from cowardice, or grilling heat from freezing cold, or existing man from existing apes; what sets us asking for a definition is a difficulty felt in discriminating courage from, say, bravado or foolhardiness, a required heat from too much or too little, or primeval man from the ape of the same period. The problem of definition is thus the problem of distinction at its sharpest and severest; definitions are most needed precisely where they are most difficult to draw.

And further reflection shows us that the difficulties of a distinction may be felt in two different ways. We may feel them in a general way, and wish to provide for them beforehand; or we may feel them in connection with some actual statement. Now the former of these wishes can, as we have seen, only be satisfied incompletely; it is what our dictionaries try to do. Since knowledge is progressive, our anticipations of the difficulties which will be felt in the future are at least as risky as the anticipations of future political institutions, or engines of warfare, or conveniences of travel, which our best imaginative writers can give us. They are always exposed to little unforeseen errors or oversights that may wreck the whole conception. Interesting as these guesses often are, they cannot claim finality. They can foresee much, and suggest much, but they must leave it to the future to pass judgment upon the extent and kind of the incompleteness which belongs to them.

The second way of feeling the difficulties of a definition—the doubt about the meaning of a particular statement which has been made—is, in fact, this "judgment of the future" in the only form it can ever take. It is a criticism on some past definition which the present occasion reveals as inadequate. It depends upon the recognition of an important difference between two kinds of "A," which the existing definitions of A have treated as unimportant and negligible. It is the discovery of an occasion on which the hitherto clear and useful word A has unexpectedly become ambiguous.

Remembering what was said in §§ 20-22, therefore, we see that occasions arise on which a request for a definition becomes extremely pressing. To the question, Which of two meanings is intended? an unmistakable answer must be given if the statement in which the ambiguity occurs is to have any meaning at all. The sharp alternative is presented to the speaker: "Either you mean 'A' to include so and so, or you do not. In the one case, I agree with you, and your statement therefore gives me no information; in the other case you are giving me information which I am not ready to accept. And until you tell me which alternative you prefer, there is nothing further for me to do. For me there is no *assertion* at all contained in your ambiguous statement."

To this extent, then, it is true that every statement makes a claim to perfect definiteness in its terms. Every assertion, as such, involves a clear and downright denial of some other possible assertion: the term A cannot be used as a predicate without involving the denial of non-A, and so claiming to draw the line between them with perfect sharpness. Thus the point of any predicate depends on its exclusiveness, just as—to quote an old example—the point, or significance, or function of a special chalk-mark on a door is lost as soon as other doors are marked in the same way. So much, indeed, formal logic has told us. And as long as we remain at that point of view, ignoring all the trouble of ambiguity, and supposing that every class-name has some one correct definition which has only to be stated to end all doubts, we ask no further questions. But here we have chosen—or have been driven by our pre-occupation with two-sided disputes—to recognise that an ambiguity is often seen by one person while another fails to see it; and, moreover, that this is a fate that may overtake any descriptive word that is used in a statement. To recognise this is to recognise also that any word used in a definition may itself need defining. Hence lack of sufficient definition may invalidate any assertion that is made.

On the other hand, as soon as we recognise that, though perfect and final definition is an ideal that is strictly out of reach, definition sufficient for human intercourse is all that is wanted, the situation is completely altered. Perfect definition is no longer both necessary and impossible. Sufficiency, like importance, is relative to purpose, so that what is insufficient for one purpose may be fully sufficient for another. For where neither of two disputants discovers an ambiguity in a statement, no pressure for greater definiteness arises. And, in general, a definition which, in a hundred years from now, will be on many occasions found insufficient may serve every purpose which we of this generation are able to foresee. Thus the difficulty of drawing a satisfactory line between A and non-A is reduced to manageable proportions when we remember that there is an equal difficulty in finding relevant objections to the line as drawn in any particular manner—for example, by the general agreement of experts to-day. Easy as it may be to complain at large that a given definition has theoretical imperfections, such a complaint has no bearing upon a particular statement until the statement is found ambiguous. And the finding of an ambiguity, as we have seen, depends upon knowledge of facts the truth and importance of which require to be shown.

§ 38. *Summary of the Chapter.*

We have seen that the common-sense way of using distinctions is partly successful, but cannot always be trusted to escape confusion. The coarser common sense renounces irregularly and accidentally, rather than of logical purpose, the trouble-saving method of assuming that the goodness or badness of a distinction, or of a definition, belongs to it in itself and without reference to its particular use at the moment. Even the finer common sense, though instinctively inclined to use distinctions in the way in which they ought to be used, is hindered by retaining certain idle habits of thought which "logic" ought to censure but seems to justify. For it is easier to assume that a distinction must be intrinsically either trustworthy or not trustworthy than to seek in its contexts—in the arguments to which it is applied—when and how far it is to be trusted. It is always easier to follow broad rules than to take into account exceptions, special circumstances, or the needs of a particular purpose. That is one reason why mankind loves party cries, and banners, and fixed rules of life. Life, we feel, is difficult enough and complicated enough anyhow; we are tempted to simplify it by refusing to look at any complications that are not forced upon us. We are tempted to bury our talent for discrimination rather than trade with it and take the risks.

Indeed, there is nothing more difficult in thinking than the problem of using rules just as far as they will bear using and no further. The rule that A is distinct from B is a rule like any other, and the everlasting difficulty is that of knowing which cases are exceptions to it and which come under the rule. But because it is difficult the problem is not necessarily desperate. At any rate it is better to take even a few steps along a difficult road than to sink in a wayside quagmire. Though the difficulties remain, at least the confusions to which the use of distinctions gives rise are removable through recognising that the same distinction may be trustworthy for one purpose—*i.e.* when used in one context—and not for another. This first step we can all take and so avoid the two chief errors—of using a generally useful distinction on the wrong occasions, however rare they may be, and of condemning a particular use of a distinction merely on the ground that looseness can be discovered in it. Looseness can be discovered in all distinctions if we choose to press inquiry about the precise definition of either of their terms, and we can never safely use any distinction at all unless we are content with the safety that suffices for some particular purpose. The fatal mistake is to talk at large about the goodness or badness of distinctions and definitions, ignoring the dependence of their qualities upon the purposes to which they are related. So to conceive their nature is to leave ourselves wedged between the two opposite embarrassments, that all definition is imperfect, and that without perfectly defined predicate terms our statements lose their point—that unless we can know exactly what an assertion denies we do not know exactly what it asserts, while nevertheless such exactness of knowledge is a mere delusion due to the accident of our not having raised questions that might have been raised. To draw a line may be difficult, but it is wholly a matter of occasion and purpose; some purposes are sufficiently served by what for other purposes would be only a vague indication of meaning.

Definition is commonly supposed to be the remedy for the faults of a distinction; if you clearly define the term A, it is supposed, you get over all the difficulty attaching to the distinction between A and B. But in the first place, this is precisely like saying that if you put salt on a bird's tail the bird is easily caught; and in the second place, our everyday notions about the nature of definition are infected by several kinds of attractive but unnecessary confusion. Of these, three have been specially noticed.

The first was the confusion between a definition and a statement of fact; the second was the confusion between the accepted meaning of a word and any slightly unusual meaning which a speaker on a given occasion may be trying to convey—confusion between "the" meaning and "the speaker's" meaning. These two kinds of confusion are closely allied, though not quite the same. In the first place, a statement of the generally accepted meaning of a word *is* a statement of fact; it asserts that the majority of educated people (or some such actual class) are to that extent in agreement—an assertion which may be true or false. And in the second place, a subtler source of our tendency to take definitions as statements of fact lies in their incidental function of *describing the things* that belong to the class A. So far as the class A is regarded as something that exists in Nature, rather than in our way of viewing Nature, so far the statement that every A has such and such qualities is a statement of fact. But of course it is only the generally accepted class A that can have so much solidity—and even that not often. In so far as there is any doubt about the limits of the class the definition states what ought to be, rather than what is; it says, not that all of a recognised list of things have, as a fact, such and such qualities, but that unless any given thing has them, it does not deserve to belong to the list (whether as a fact it does or does not so belong). A definition is primarily concerned with the meaning of words, and the very condition required for turning such a statement into a statement of fact—general agreement about the meaning of the word—is absent wherever a definition is asked for. You do not ask to have a class defined when it is definite *already*; and when you have no notion at all what class is referred to, a "translation" is what you need.

The notion that every word has some one "correct" meaning which it is the function of a definition to give stands in the way of our seeing that a definition—as an attempt to remedy the defect of a distinction—is always a postulate and not a statement of fact. Even a definition which attempts to find the most convenient meaning of a word for general purposes says no more than "Let us all agree to use the word in such and such a sense." But much more clearly is this so when the definition is given by a speaker in order to remove a discovered ambiguity. What he then says in effect is, "I ask you to interpret my statement as bearing such and such a meaning—a meaning as definite as your question demands." Whether this meaning agrees with, or departs from, or flatly contradicts previous general usage is then a totally irrelevant circumstance.

Lastly, we noticed the difficulty about the contrast between claim and achievement in regard to perfect precision of line drawing. On the one hand, the more closely we press inquiries as to any dividing line, the more we become convinced that there is strictly no end to them. There is never any final guarantee that a class which for all purposes hitherto has been unmistakably A will not deserve, for some new purpose that arises, to be split into two portions, one of which is unmistakably A while the other is not so. On the other hand, it seems that every statement—in order to have any meaning, and so to convey an assertion—assumes that its predicate term is perfectly definite. For assertion of anything involves the denial of something else, and so far as there is any doubt about what an assertion denies, there is doubt as to its meaning. So long, therefore, as we suppose that the only possible alternatives are that any predicate term is either perfectly definite or not perfectly definite, then it seems that since perfect definition is strictly impossible we have no resource but to conclude that every statement is meaningless.

Common sense is wise enough to avoid drawing this conclusion. But since it never faces the difficulty in a general way, it is liable to be puzzled unexpectedly when an opponent raises a question of precise definition; and being puzzled, it is tempted either to shuffle or to bluster impatiently, with the result of looking foolish in the end. Yet the remedy is simple as long as we bear in mind that the value of every distinction, and therefore of every definition, depends on the context in which (the purpose for which) it is used. For in this way we see that the need of definiteness is felt only where ambiguity is discovered, and that the finding of an ambiguity involves the raising of a question of fact. On the one hand a statement does convey a meaning to any one who fails to find an ambiguity in it; and on the other hand, the maker of a statement can at any time give it *sufficient* definiteness to remove the ambiguity that an opponent claims to have found in it. The question whether the distinction which causes the ambiguity is really important, is a question of fact like any other. And on this question depends the decision whether the statement is sufficiently definite for its purpose.

PART III

SOME TECHNICALITIES AND DOCTRINES

and that every word gets its logical character from the use that is made of it in some assertion. From this it follows that any logical doctrine that appears at first to come distinctively under one of the above three heads might equally well come under either of the others. In short, it matters not where we start on an inquiry into logical doctrines since they hang together so closely that a sufficient treatment of any one part inevitably draws us on over the whole field.

Many of the old technicalities of logic have been adopted into ordinary modern language, in meanings which have departed more or less widely from their mediæval ones, and have by now become vague and loose. *Species*, *Deduction*, *Converse*, *Abstract*, *Hypothetical*, *Dilemma*, are a few of these taken at random. Others, such as *Illicit Process*, *Epicheirema*, *Syncategorematic*, are seldom if ever met with outside the text-books. What is to be our attitude towards these two sorts of logical technicality? Are we to accept them all or to discriminate between them? Are we to learn their meanings, carefully distinguishing between their "correct" and "incorrect" ones, or are we to say that the correct meaning of such and such a technicality is, as a matter of fact, so and so, though formerly it was something else?

These questions are easily answered. We are here concerned only with the *use* of technical terms, and therefore those that are now useless need not be mentioned; and we have nothing to do with statements, historical or otherwise, about their "correct" meanings. There is, of course, a possibility of raising in a useful way the inquiry what was the meaning of such and such a word as used by (*e.g.*) Aristotle, or Thomas Aquinas, or any one else, and why later writers have departed from his custom. And there is also a possibility of attempting to lay down the law by saying that such and such a word must now mean so and so, and that any one who disputes that dictum is outside the logical pale. But all such attempts are beyond the ambition of this book. From our point of view technical meanings are not correct or incorrect, but *convenient* or *inconvenient*; and if we are to call any particular usage of a technicality by one of these epithets, we recognise (1) that this is a matter of opinion, (2) that convenience is a quality which refers to some purpose, and (3) that in order to justify our opinion it is necessary to state the purpose involved, to show how the usage in question affects it, and to give any further explanations that may seem to be required.

As an example, let us take the distinction made on p. 249 between a *definition* and a *translation*. The convenience of having a distinction of this kind is that unless we have it the word "Definition" cannot escape being often used ambiguously. It will be found that a great deal of confusion is avoided if we use the word "definition" only for cases where the object is to remove an intelligent and pointed doubt about a word's meaning in some particular assertion, and "translation" for cases where the object is to give (as a dictionary does) a general account of a word's meaning to some one to whom the word is either unfamiliar or "generally vague" (§ 19). Besides the reasons given on p. 252 for this distinction, I may mention another. It is quite possible that the reader will sometimes not be convinced that the general account (translation) I have to give of certain technical terms is the best that could have been chosen, or even that it is any better than the traditional account which will be found in the text-books. Whether mistaken or not, such a view is at least always tenable. But in regard to a definition difference of opinion has no standing ground, for the reason that a definition is not a statement of opinion on a matter of fact—for example, on the general convenience of a certain usage—but is always a postulate (p. 261). It is the explanation given by a speaker of the sense in which he asks to be allowed to use the word in a given assertion. You can often find a definition *insufficient*, namely, where it still leaves the assertion ambiguous, but there can be no meaning in calling it false; and to say that because you do not think it convenient on general grounds you will not listen to it as an explanation of a particular meaning, is only to refuse to know what the intended assertion is. Logical doctrines are compelled to take the form of statements; and the function of a definition in regard to them is merely to explain their intended meaning. It is in order to meet any difficulties there may be in interpreting any of the logical doctrines in this book that the reader is asked to make use of the definition given, whether he thinks them good "translations" or not.

Since, as we noticed above, some words which were formerly logical technicalities are now in everyday use, no clear line can be drawn between the technical terms of logic and words of a more ordinary kind. And the same is true of logical doctrines as compared with ordinary truths, unless we choose to restrict the field of "logic" in a way which is only defensible if a perfunctory treatment of the subject is so—for instance, as a saving of trouble to the teacher and the examiner. From our point of view, therefore, every truth is a logical doctrine if it can be used in any way, even indirectly, to further our knowledge of the difference between better and worse reasoning. For example, the fact that all the members of every class differ from each other has plenty of logical applications, though in itself it might seem to be rather a truth about things in general than a logical doctrine. But from our point of view it matters not the least what we call it so long as we clearly recognise its truth and its consequences.

And this latter phrase reminds us of another truth so general that some might call it a matter of common sense rather than a logical doctrine, namely, that the truth of a statement can only be recognised (and can also only be disputed) in so far as its consequences are seen. By the "consequences" of a statement is here meant what is also often called its "meaning"—that which is intended to follow from it, and therefore that which, if it should turn out to be false, would prove the falsity of the statement in question. All that this doctrine asserts is that it is nonsense to call a statement either true or false till we know precisely what assertion it makes—*i.e.* what meaning it is intended to cover. And its chief use is to remind us of a fact which formal logic, and some kinds of philosophy, tend to forget, namely, that a statement is not itself an assertion, but is only the sign that an assertion of some kind is intended, and that (consequently) statements are always liable to misinterpretations.

These two doctrines are certainly, in a way, commonplaces of common sense. But modern logic is beginning to recognise that they are not so fully understood, or so consistently remembered, as they might be. Their meaning needs developing, or their "consequences" need following out, and by doing so we reach a number of other doctrines which are more obviously logical, and some of which require for their statement an array of carefully explained technical terms.

§ 40. *Individual Peculiarities.*

In Chapter II. we noticed that any fact is composed of innumerable details. That is to say, anything that we call a detail is itself made up of smaller details, and these again of still smaller ones; and so on, for as long as we choose to continue breaking up any detail into its constituent parts (pp. 50, 51).

A well-known example is provided by finger-prints. It took mankind many centuries to discover the use of them as a means of identification. At a casual glance one finger-print is very like another; but of late years attention has been widely drawn to the minute differences which are observable, and the work of noticing and classifying these has now been carried so far that it is doubtful whether among all the millions of inhabitants of the earth there are any two fingers a clear print of which would not be distinguished from each other by the experts.

But let us suppose there are two indistinguishable finger-prints—or two thousand, if that seems a more reasonable supposition. Still, that is not the same as saying that any two are exactly alike, but only that they are so nearly alike that even the experts (with their present methods of classifying and observing the different shapes) may fail to distinguish them apart. Given closer scrutiny and more accurate means of measurement, some difference would appear.

How do we *know* this? We may be content to call it highly probable, if we are also content to say that it is only highly probable that our powers of observation everywhere fall short of what is there to be observed. We "know" it only in the same way that we know any other negative truth—such as that we can never come to the end of the process of subdividing a given straight line, or of imagining a space beyond a given distance. All that it amounts to is the recognition that if any one says that two given indistinguishable finger-prints (or two indistinguishable things of any kind) really *are* exactly alike—if any one asserts that their appearance of being so is *not* delusive—there is no possibility of proving that either. Meanwhile there is no difficulty in supposing that human powers of vision are limited, even when the best instruments are used and when the utmost possible care is taken; and we know that the long history of the progress of knowledge is made up of examples of hitherto unsuspected differences coming to light.

But speculative instances of this extreme kind may, if we choose, be here left out of account. For our purposes it is enough to recognise that any ordinary class, the members of which can be observed, is capable of being subdivided into those members that do and those that do not possess a given quality in precisely the same degree. The class eggs, for instance, or peas, or grains of sand, or drops of water, is made up of individual members which partly resemble each other and partly differ. It is never safe to assume that one pea, just because it is a pea, is in all respects like any other.

Several logical doctrines arise out of this truth, or are more or less connected with it. The first that we had occasion to notice was that no fact is simple, *except by agreement to call it so* (p. 51). We saw that a difference of opinion about the simplicity of a fact is one of the commonest sources of a dispute (pp. 26, 46), and that it is liable to arise over and over again in the process of making the point at issue more definite, even up to the final stage where a supposed crucial experiment is referred to (pp. 104, 141). The simplicity of a fact, we found (pp. 107, 144), belongs only to the name or names used in describing it, and there is never any complete guarantee that a given description of a fact does sufficient justice to the details of which that fact is composed. It is always possible that one or more of the details which a given fact omits is an important detail, a detail which if recognised would alter our view of the fact's real nature. Hence the simplicity of a fact is always an assumed simplicity; and the assumption may be importantly false. Whether it is or is not false in a given case is a matter for discussion between the disputing parties. And exactly the same is true, for the same reason, of the distinction between a simple and a complex argument (pp. 25-29).

But the logical interest in this truth goes far beyond the mere recognition that one disputing party cannot force another to regard a fact or an argument as simple. It leads us to reorganise our common-sense notion of the nature of descriptive names, and so of the whole use of words in reasoning. What may here be called the crude common-sense view is very much the same as that adopted by the traditional logic and embodied in its so-called "Laws of Thought" (pp. 109, 143). When we regard as an undeniable axiom the law (*e.g.*) that A is A, our natural tendency is to assume that this law is intended to tell us something—to give us some information. It cannot, we feel, be intended as a mere tautology, as saying no more than that if a thing (S) is really A, it really is so. Then what can it be intended to mean? What actual cases can it be applied to as giving us the information that all such cases are really cases of A?

With a little ingenuity we can, of course, make it mean something quite different from what on its face it seems to mean; and various logicians, feeling the difficulty, have in fact taken this line. Instead of trying to interpret it as a statement about "cases of A," they have chosen to interpret it as a statement about *logic*—about the preliminary assumptions which logic is (according to them) compelled to make; for instance, as saying that logic is compelled to make the assumption that "Truth is at all times true";[1] or again that logic is compelled to assume that "there is a certain[2] relative identity and persistence of things." Now however interesting—whether mistaken or not—these views of the necessary limitations of logic, may be, the appeal they make to us is of a different kind from that which an axiom makes when we are asked to accept it as true. In the one case the asserted axiom comes before us as a postulate supposed to be required for "logical" purposes merely; in the other as a rule which, we are given to understand, is as a matter of fact trustworthy throughout. It is for the philosopher, not for the plain man or the beginner in logic, to accept an axiom and at the same time to regard it as acceptable only because "logic" has need of it. The plain man's view would naturally be that if logic depends upon doubtful foundations he had better turn his attention to some more satisfactory branch of study.

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[1] *I.e.* That what is true in one context is true in another. Our logic, by the way, as we saw at pp. 147-9, 263, not only does not make this assumption, but directly controverts it.

[2] This is one of the many cases where the word "certain" seems to be a euphemism for "uncertain." *How much* "identity and persistence" is assumed? That is precisely the difficulty that is left unsolved—and the only point that matters.

On its face, then, the axiom that A is A speaks of cases of A, and tells us that we may safely trust them to be in fact cases of A. And in order to prevent this being a mere tautology it is necessary to make some difference of meaning between the first and the second A. That this is easily and naturally managed may be seen by observing how the axiom is interpreted in those text-books which—like Jevons's Elementary Lessons—are almost innocent of the troublesome modern perplexities of thought. We have only to forget that *classes and class-names exist for human purposes,* and the thing is done. We have only to assume, as the child does and as every one did a few centuries ago, that "natural classes" are non-artificial products, and that, though we may name them as we please, we do not in any sense create them, and then it will be found that the axiom "A is A" expresses that assumption itself. It says that, having applied the name A to a given case, we have no standing ground from which to question the correctness of the application.

Probably Jevons never put it to himself so baldly as this. The absurdity of it has to be a little disguised, and that is easily managed by forgetting that the "facts" we have experience of are facts as described or conceived (pp. 105-8). It is by forgetting that the only cases of A to which the axiom can be applied are cases *described as* A, that we miss seeing that the axiom, when regarded as applicable at all (and thus as avoiding tautology and having a meaning), tells us that all cases described as A may be safely taken as being *really* A; or, in other words, that error of fact—*i.e.* mistaken description of fact—is impossible.

We have not, then, to learn that A is A, but to unlearn it—or to unlearn the thoughtless but natural assumption which gives it its meaning when applied. Modern logic takes for granted not that mistakes of fact are impossible, but rather that they are commonly made and are often difficult to discover. And one of the first requisites for keeping this clearly before us is to remember that recognised fact is not pure fact, but theorised fact (p. 231), and that the theory in it is always questionable. As to pure or unrecognised fact, it will be time enough to consider its nature when we meet with a case of it. Meanwhile "facts" as we do meet with them are liable to error, and to make a mistake in a fact is to think of it under some wrong conception, and so to give it a wrong descriptive name.

And it is because all the members of a class differ from each other that a statement (*i.e.* a recognition) of a fact necessarily contains an element of theory and so is always disputable. Since all members of the class A are different from each other, a given case S, even if it belongs to the class, differs from all the rest; and therefore the assertion that it belongs to the class—that it is A—must mean something else than that there is *no difference* between it and them. What it does mean is that there is no important difference (pp. 34, 106). But the relative importance of the differences and resemblances between S and the other members of the class A is always a matter of opinion or theory, and it is on the soundness of this opinion that the question whether S is or is not A depends. All judgments of fact, therefore, are judgments of analogy, and all errors of fact are false analogies accepted as true. To recognise that a fact (S) is A is to judge that there is essential resemblance between S and the members of the class A; and if, instead of the resemblance being essential, the difference is so, the "fact" is false.

Another use we have made of the truth that individual cases are all different even when named alike was to show (§ 9) the reason why statistical probabilities are only trustworthy when applied to a large variety of cases, so that the individual differences can be averaged out. Take any case by itself, and its individual peculiarities may for a given purpose be more important than its *general* character as a case of A, or of X, or whatever it may be called. And it was through this consideration that we arrived (pp. 77-80) at our first view of what constitutes an effectively ambiguous middle term in a syllogism; which is the most important and far reaching of all logical doctrines. In order to state it we shall need to revise some of the usual technicalities.

§ 41. *The Syllogism and its Technical Terms.*

A translation of the word "syllogism" is given on p. 22 as "the kind of argument which consists in applying a general rule to a particular case." It is claimed in favour of the convenience of that meaning: (1) that—with two doubtful exceptions[1]—this operation can be discerned in anything that has ever been recognised as a syllogism; (2) that the application of rules to cases is so fundamentally important that it deserves to be viewed as the central fact of reasoning; and (3) that it helps us to understand ambiguity of the middle term better than we can understand it in any other way, and generally to guard us against useless perplexities and confusions which the traditional view of the syllogism (as a structure built with three propositions, of four varieties of form) inevitably forces upon us.

In a syllogism thus understood, the major premiss expresses the general rule, the minor premiss expressing the fact brought under it; and the order of the premisses is logically unimportant, as also the order of the words used in stating either the premisses or the conclusion. That is to say, any sentence, however simple or complex, has to be interpreted before it forms either a part or the whole of an argument.

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[1] Namely "invalid syllogisms" and "syllogisms," in which both premisses are "singular propositions" (*i.e.* where they refer to the same individual case). But invalid syllogisms are also recognised as pseudo-syllogisms, and therefore are not syllogisms at all, except by delusive appearance. And as to the case where we have two singular propositions as premisses (*e.g.* "Fashoda is now called Kodok; and Fashoda is where a certain event happened") we may notice, first, that instances of this kind of reasoning are comparatively rare, and that there would be no harm in regarding them as a class apart from the normal type of syllogism; and, secondly, that even if we call them syllogisms there is nothing to prevent our saying that one of the premisses—no matter which—can be regarded as virtually a general rule, since it acts towards the other in precisely the same way as a general rule acts towards a particular case that comes under it.

We can now translate the technicality "a syllogism with an ambiguous middle term" as meaning "a pseudo-syllogism where there seems to be, but is not, the required connection between the major and minor premiss." How this occurs was explained more fully in § 21.

The way in which a syllogism, used for proof, is related to argument in general was discussed in Chapter II. What we there found was that few disputed arguments can be fairly represented as simple syllogisms, though with undisputed ones this is often possible. Any two disputing parties can, if they choose, agree to discuss the value of a given argument on the provisional assumption that it has such and such a major premiss and is therefore not a complex argument. And a tacit agreement of this sort is common enough. But we must always remember that we have no right to treat an opponent's argument as a simple syllogism without his leave—no right, that is, if our object is to. examine his argument fairly. To insist on doing so is to put ourselves in the weak position of trying to catch an advantage by "logic-chopping." No sensible opponent, whether he has studied logic or not, will tamely submit to such treatment, and modern logic puts into his hand various weapons to use against it. The easiest is that of specifying further details in his "fact" (p. 49).

There is also another point which our review of the main line of argument should have brought prominently into notice. That is, that in nearly all disputes, and especially in the more durable ones, what divides the parties is some difference of opinion as to causes and effects. Not that such difference is necessarily apparent in the form of the dispute; but that it is always there, and that the whole tendency of the progress from vagueness towards definiteness of issue is to bring it to the fore. For all arguments are about "the nature of things," and the nature of things is nothing else than the way in which things behave in various circumstances. Thus it is always in knowledge of causes and effects that one person's view is better or worse than another's, and as a rule the deeper knowledge results in a more complex view of the relation between X and Y. The notion of "direct" causation anywhere is liable to be superseded by the discovery of the importance of intermediate steps (§ 15), and in fact the whole progress of scientific knowledge consists in this kind of gradual discovery—a discovery one aspect of which is the breaking up of "X" and "Y" into distinct kinds of X and Y, and the consequent finding of ambiguity in the simple name.

Throughout this book we have been concerned with the difficulties that attach to the application of general rules to particular cases. We have seen that if our accepted general rules were always clearly conceived, and our particular facts unmistakable, then argument would run as smoothly as a proposition in Euclid or a simple syllogism, and that—though careless slips would still be possible—there would be no room for those deep and lasting differences of opinion which play so large a part in the world as it is. But we have also found that the pursuit of these two desirable conditions—two perfect premisses for a syllogism—is full of surprises to all of us, and of disillusionment to those who imagine it easy. Good rules we have in plenty, and a large store of sufficiently trustworthy facts; but there seems no prospect—let us say, as far as can now be foreseen—of arriving at perfection in either of these two directions. Our good rules are usually either not quite true or else not quite definite, and our known facts have always in them details—and possibly important details—which any description or conception of the fact must leave out of sight. As soon as we admit that the rule "All X are Y" has some unspecified exceptions, or (what is the same thing) that the term X, as used in it, is at all of doubtful application, the question whether S is X loses some of its apparent simplicity. S, it is now seen, may be X, and yet not one of the X's that are Y; or again it may be one of the cases that are X only by courtesy or in clumsy popular thought, or that are good imitations of the real thing.

This deserves to be called the central group of difficulties because it enters into the whole structure of reasoning, however carefully we pull an argument to pieces or however thin we beat it out. It attaches to the argument by means of an apparently simple syllogism, and also to every smallest fraction of the real complexity which discussion brings to light. Everywhere our knowledge of a fact depends on our power of seeing its details as having a meaning behind them; that is to say, our power of applying our general knowledge to them. And similarly our general rules would be meaningless unless they were supposed to have application to particular facts; their only function is to be applied in particular case, and their truth and untruth is always relative to this or that suggested application.

To a certain extent, and yet not altogether, this view of the relation between rules and facts appeals to our common sense. There is probably no one who does not frequently act upon it in dealing with the argumentative difficulties that present themselves in daily life. We frequently ask to have abstract statements translated into their concrete equivalents, and we frequently see that a "fact" is true in one sense and false in another, or that its truth is in some sort of relation to the use to which we propose to put it.

And yet it cannot be said that common sense holds this view consistently. Or rather "common sense" is an elastic term which covers many varieties of mental attitude, and in some of them the troublesome process of taking into account special purposes or special context is avoided as much as possible. What the commoner common sense loves is simplicity; what it hates is subtlety; and if we are to keep our problems simple some violence must be done to the real complexities which can always be found in them by those who choose to take the trouble.

And one of the chief methods always adopted for the sake of simplifying problems is that of analysing them into separate steps (p. 75). The rule or rules, and the fact or facts, which are involved in all proof are treated as isolated entities, and their truth or falsehood examined on that assumption. It is supposed to be one step to make out whether the major premiss is true, and another distinct step to enquire into the truth of the minor premiss; and when you have thus got your units you proceed to add them together and announce their sum. As we noticed just above, however, ordinary common sense does not consistently rely on this simplest process in dealing with the problems that arise. It is rather in theorising about the matter that it is led to do so, under the authority of a logic that suited a simpler age than our own. That older logic admits, indeed, that there may conceivably be such a thing as an ambiguous middle term (p. 114); but having made the admission, and having laid down the excellent rule that a middle term must not be ambiguous, it then proceeds to neglect altogether the one serious risk of ambiguity that exists. Ambiguity, for the old logic, is double meaning only, and scarcely a hint is given as to the almost universal presence of the less obvious kinds—the kinds that in real life deceive us. One aim of this book has been to show that the question, whether S is really X, in the sense in which it is true that all "X" is Y, is the problem which remains to obscure those obstinate disputes which survive the removal of all simpler difficulties.

Are we then to condemn unconditionally the analysis of arguments into steps or stages? That does not follow, and is certainly not here recommended. The suggestion that it should follow is itself an instance of the excessive desire for simplicity. A parallel case would be the suggestion that since science lives by revising and correcting previous scientific theories, therefore all existing scientific theories should be unconditionally condemned as false. What is done in the one case can be done in the other with equal ease. Analysis, like a scientific theory, may be applied provisionally and put to a temporary use. We may, for example, discuss the truth of a rule taken loosely, or of a fact taken loosely, before we enquire how this first aspect of the truth is affected when the two are used together. Indeed, this is often done instinctively by common sense; which to that extent proves itself a better instrument than formal logic.

Ambiguity in the middle term, we now see, is a defect which is rendered possible—and always possible—by the impossibility of ever stating (or conceiving) a fact so as to take into account all its individual peculiarities. We have no means of conceiving the nature of any fact except by leaving out some of its details on the ground that they are unimportant; and just so far as we are liable to error in making this judgment we are liable to bring the fact under a rule which, though true of many apparently similar facts, is not true when applied to the fact in question.

§ 42. *Predicate and Antecedent*

Since the middle term of a syllogism is the link that connects the fact with the rule, it is always the *predicate* term of the minor premiss (p. 78) and the *antecedent* term of the major premiss. Here we have two more technicalities which call for some discussion.

"Predicate term" is an expression that is familiar in grammar; and the slight difference between the grammatical account of it and that given in the logic text-books[1] is here of no importance. On the other hand there is some convenience in departing from the old logical custom of speaking of the "Subject" and "Predicate" in a statement of a rule, and in calling the terms of a major premiss "Antecedent" and "Consequent" instead. The reasons for making this change are chiefly two. In the first place, it does away with the useless and confusing barrier that the old logic made between "hypothetical" (or "conditional") and "categorical" propositions—a barrier which involved making an unnecessary distinction between two kinds of syllogism (the hypothetical and the categorical syllogisms) with different sets of rules for avoiding invalidity. Instead of this we can now recognise that it makes no logical difference whether we happen to *express* a rule in hypothetical or categorical form; that, for instance, the expression that "all unearned increment is theft" means[1] neither more nor less than that "*if* any increment is unearned it is theft." Any rule can be expressed indifferently in either of the two grammatical forms without losing one iota of its meaning so far as regards its function as major premiss. Now in the old logic the terms of a hypothetical were called "antecedent" and "consequent," and these technicalities express fairly well the *inferential* character—which is merely the major-premiss character—of any rule whatever. The essential meaning of any statement of a rule is to assert that, something (X) being given, something else (Y) *follows*, or may be inferred, or is its logical *consequence*. For example given manhood we can infer mortality; given that any one is a socialist, we can infer that Y is one of his qualities; given that a figure is a triangle we can infer that its three interior angles are together equal to two right angles; given that we are standing, in the northern hemisphere, facing the wind, we can infer that the relatively low barometric pressure lies on our right hand. The purpose of recognising any rule, "All X are Y," or "If X, then

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[1] What the traditional logic calls the *copula* is part of the sentence and not part of the assertion. Even formal logicians confess that it is only "the sign that an assertion is made."

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[1] *I.e.* when used as major premiss.

Y" always, is that we may be able to draw the *consequence* Y in a specified group of cases.

The second reason in favour of the change is that the subject term of a predication is unemphasised, while the antecedent term of an inferential is emphasised; and that, therefore, to think of these two sorts of terms as having the same "logical character," is often misleading. But it must first be explained what is here intended by the emphasis (or descriptive emphasis) of a term.

By an emphasised term we mean very nearly the same as J. S. Mill meant by a "connotative" as contrasted with a non-connotative term: in fact, exactly the same as he was apparently trying to mean by it, and would have been able to mean by it if he had clearly seen that the same word may have two opposite logical characters in two different assertions. Mill had only *general* uses in view—just as the grammarians and the formal logicians still have—and he saw that, generally speaking, proper names are used to refer to (or "denote") individual cases, not through the meaning ("connotation") of the name, but in virtue of an arbitrary prior understanding about the name's application. The proper name Charity, or Mercy, or Brown, or King, remains the name of the person it belongs to in spite of any amount of failure in *describing* the person; on the other hand, the application of the general names charitable, merciful, and so on, is admittedly dependent on the existence and continuance of the corresponding *fact* in the given case. The man who is young to-day will lose that quality in due course of time, but the man who is Young will remain[1] Young till he dies. Even the really descriptive nicknames which boys occasionally get at school often outlast their descriptive value.

All this Mill saw; but the point that he missed seeing clearly is that the absence or presence of descriptive meaning in a name results from a difference of function, not on the average or in general, but in *any particular assertion.* In general, proper names are used as subject-terms in predication, but they need not be so; for instance "S is a downright Pecksniff." On the other hand class-names (or "general names") are usually predicates, but there is nothing to prevent their being used as subjects, and so dropping for the time all claim to be accurately descriptive. Whenever we are constrained to assert that a so-called A is not really A, we necessarily use the term A, *as subject*, without emphasis; otherwise our statement would be nonsensical. If I say that members of the nobility are often the reverse of noble, or that the

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[1] If he chooses to change his name, still his qualities are not the index to the change.

British working man is often slack and idle, or that the first shall be last and the last first, I am not contradicting myself, but only recognising that certain terms are liable to be misleading when used as predicates. In the statement just quoted the subject term is necessarily used without descriptive emphasis. Thus it is not only what the grammarian calls "proper names" that lack descriptive emphasis, but any name—whether usually descriptive or not—when and while it is used merely to refer to something agreed upon. Any name, so used, may be conveniently called a *reference-name,* to mark the fact that it is used without emphasis, and therefore that questions about its precise definition are for the time irrelevant or misleading.

The absence of emphasis on the subject term of a predication, as distinct from the antecedent term of a rule, is further brought into view when we remember that in a great many statements of fact (predications) the subject term is not *expressed* at all. "It is raining" is a statement of fact, but even Jevons stopped short of saying that "It" is its subject term. Still more plainly, statements like "Fire!" or "Traitor!" or "Guilty" are devoid of any *expressed* subject term. Wherever, in short, either the nature of the statement or the circumstances of the moment seem to indicate sufficiently what the subject of the assertion is, and so render expression of it a waste of words, the natural and sensible custom is to leave it unexpressed. Moreover, even where both terms of a predication happen to be expressed, it is often far from certain which is the subject term. Here the text-books give no real help. The worse ones[1] begin by boldly telling us that the "first" term of a proposition is its subject; and then, suddenly remembering by an afterthought that in sentences like "Great is Diana" this rule is misleading, they proceed to qualify the statement vaguely, with the result that the reader gets no clearer instruction than that he must use his own common sense in the matter as best he can. Give him the sentence, "Newman wrote the Grammar of Assent" and ask him whether "Newman" or "The Grammar of Assent" is its subject, and he has no means of answering so long as the statement is regarded in isolation from all context. Regarded in this abstract way, it may equally well be called a statement about Newman, or about the book, or again about both the man and the book.

And, similarly, there is no way of deciding, apart from context, whether a given statement is a statement of rule or of fact. If a statement of rule (*e.g.* "All unearned increment is theft") is *not* a statement of fact, that is all that an opponent could wish to say of it; and if a statement of fact about a whole class of cases (*e.g.* "All unearned increment is theft") is *not* a statement of rule, what purpose or value is it supposed to have?

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[1] *E.g.* Jevons's *Elementary Lessons*, viii.

But as soon as we recognise that it is only *within a syllogism* that the distinction between a statement of rule (an "inferential") and a statement of fact (a "predication") holds good, the difficulty vanishes. We then see that the very same statement may be a statement of rule in one syllogism and a statement of fact in another. Thus the above statement about unearned increment may be used as a minor premiss to the rule that all theft is despicable, or as major premiss to the fact that here is a case in point.

And when once the logical character of a statement as "rule" or "fact" is thus made to depend on its use in a syllogism, the other difficulty—as to which term of a predication is subject and which is predicate—disappears in a similar way, because we now know which is its predicate term, namely, the middle term of any syllogism in which the statement is minor premiss. Thus in the statement that Newman wrote the Grammar of Assent the book would be subject when the object is to prove some assertion about the book, whereas Newman would be the subject when the object is to prove something about Newman. The suggestion is here made, therefore, that much confusion and perplexity will be saved if we look to the use of assertions in a syllogism for decisive information about their logical character, and also about the logical character of the terms involved. The middle term of the syllogism is the one on which, for the time, all the descriptive emphasis rests; and the middle term—since its function is to link the fact to the rule—is the predicate of the minor premiss and the antecedent of the major. The other two terms, since they belong to the conclusion, are supposed to be clearly understood before the syllogism comes into existence; for what would be the good of setting out to prove, or to argue about the truth of a conclusion, before the disputing parties have come to an understanding about its meaning? No doubt this is often done, but no one would try to defend the practice seriously; rather, we all admit that it is the chief root of argumentative evil. The question, What is meant by the terms of the conclusion? properly arises before, and not during the syllogistic operation. It is the prior condition of any kind of attempted proof.

§ 43. *Truth and Consequences.*

The second of our two main logical doctrines mentioned on pp. 271-2 involves in some ways a still greater departure from the traditional logic. Those readers who are interested in the controversy which has lately been carried on between the "Pragmatists" and their opponents may remember that some attempts to express concisely the intimate relation between truth and consequences have led to much misunderstanding, and so have unnecessarily increased the quarrel between the two opposite philosophical parties. What to one party appears a matter of common sense, to the other appears almost a wanton blurring of the distinction between truth and falsehood. That is the worst of concise expressions; they nearly always *can* be misunderstood, and then their brevity—which has the good effect of making them easy to remember—has also the bad effect of helping us to forget the more lengthy and troublesome explanations which were given along with them. In this particular matter, what we must avoid is any expression which could fairly be taken as meaning that our emotional attitude towards the consequences of a belief—for instance, our approval or disapproval of them on moral grounds—is what ought to determine whether the belief is "true," though it is often unconsciously the reason why it is held to be so.

The pragmatist is as keenly aware as any one else that there is such a thing as a misleading bias, and that both our emotions and our intellect often blind us in this way; on the other hand he perceives also that bias is not a *wholly* disastrous factor in knowledge, because (1) for acquiring any knowledge we need the motive power of interest, and (2) in no enquiry can we start with a perfectly blank mind; so that even our most trusted results —whatever, in short, any one allows to be "true" —are largely obtained by the help of previous "knowledge." Bias, therefore, is always operative. Between disastrous prejudice and useful previous knowledge we cannot distinguish securely except by means of wisdom after the event; and since event may succeed event to all eternity, no one can presume to fix an end to the process of correcting our present wisdom.

But we are not here concerned with the whole pragmatist view of the nature of truth; only with the fundamental principle from which it starts, and which its opponents have so far not found courage to attack. This principle, in its broadest expression, is that every statement (whether of rule or of fact) depends for its meaning on the *use* it is intended to be put to. Thus a rule means nothing except as applied, and a statement of fact means nothing except so far as it is viewed as a minor premiss, and its predicate as the middle term of a syllogism. To use any statement is to make it a premiss and so to get a conclusion from it.

Other ways of expressing the same doctrine are sometimes met with—as, for instance, that the meaning of every assertion depends on its special *purpose*, or its special *context*. It is, of course, easier to neglect these considerations—to assume that a term, or a proposition, has always the same meaning however it happens to be used. But the price that is paid for this simplification is, we have seen, a heavy one. We are then compelled to neglect the chief risk in applying rules to cases—subtle ambiguity in a middle term; and since we fail to discriminate between what is true for most purposes and what is true for a special purpose, all subtle error in facts must also escape our notice. It is time that logic should cease to be content to deal only with the less excusable kinds of error.

The pragmatist holds that "Thought is purposive throughout"; and this throws a new light on the nature of truth generally. But a less far-reaching doctrine may suffice to guard us against the old logical slackness. It is enough to remember that wherever the distinction between the important and the unimportant (or between the relevant and the irrelevant) is used, a reference to purpose is implied. Neither importance nor relevance are qualities which exist at large, but only in relation to some purpose (p. 127).

This may seem at first too elementary to need emphasis; but not when we remember that importance *for general purposes* is just as much "importance at large" as if purpose was altogether left out of consideration. The point usually neglected is that, wherever general purposes and particular purposes come into conflict, general purposes have to go to the wall. To recognise this is to recognise that the distinction between the important and the unimportant can only be safely applied where the context is taken into account.

The extreme anti-pragmatist view is natural enough. It is that "truth" is something that exists apart from human purposes altogether; our purposes, we are told, are dependent on our recognition of truths, not the latter on the former. Truth "stands by itself"; human purposes either lean upon it and are successful, or lose its support and fail. Now of course any truth, *when and while it is recognised* as true, has this kind of independence of human purposes; and to pretend that any one doubts this is to go out of our way to obscure the question. But *before* an asserted "truth" can be recognised as true (or even condemned as false) the assertion must have a meaning, and it is here that the reference to human purpose comes in. The purpose and the purport (or meaning) of a statement are the same thing. To say that truth is not independent of purpose, therefore, is no more than to say that statements without a meaning cannot be recognised as either true or false—that they are mere noises in the air, or marks on paper, till some sort of meaning is apprehended in them.

And as soon as this is recognised, a distinction between general and particular purposes (or meanings) follows as a matter of course. It would be difficult to find any statement, of the kind that is ever disputed, which does not admit of some influence upon its meaning from the context in which it occurs; and while the general meaning of a statement is the meaning that belongs to it in the majority of its contexts, roughly estimated, its particular meaning depends on the particular context of the moment.

As regards rules and the dependence of their meaning on their application, we began to make acquaintance with this doctrine in Chapter II. (p. 23). There, and in various later passages[1] we noticed how, through vagueness of application, an "undeniable truth" may be misleading, and so may be virtually the reverse of true. The old formal assumption, so difficult to eradicate, that a truth remains true no matter how much it misleads us, is here directly challenged to show its credentials. But all that has yet been done towards showing them is to reassert the assumption in other forms: for instance, to say that this or that man's understanding of a truth cannot affect the truth itself; that there the truth *is*, anyhow, and as for mankind they can either take it or leave it; that it is absurd to suppose that if I assert a truth and you misinterpret my assertion, the *truth itself* is false—it is only the *truth as you misunderstand it* that is so.

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[1] *E.g.* pp. 61, 109-11, 144, and § 26.

These and similar phrases, though they do no more than reassert the old formal doctrine, suggest a possible way out of the deadlock. Suppose we freely admit that "the truth itself" is and remains for ever true; and, having done it this reverence, admit further that we personally have not yet discovered any unmistakable specimen of "the truth itself." Then our opponents will naturally divide themselves into two classes: those who dislike further enquiry will have an excuse for calling us unfortunate, or worse; and those who are of stouter fibre will try to discover what our difficulty is, and, if possible, to remove it. To them, perhaps, we shall be able to explain that our difficulty about "the truth itself" is the same as that about "fact itself" (p. 105);

that by the nature of the case *truth as stated* (or conceived) is the only form in which the claim to have found a piece of truth comes before us for acceptance or rejection; and that truth as stated needs *interpretation* if we are to know what the assertion is. Of course any one can recite the words of a creed—for instance, the words of an abstruse doctrine in Physics—without understanding them; but that, we maintain, is not quite the same thing as accepting a truth. It is lip-service, and may co-exist with disbelief of the truth asserted, or with entire indifference to it.

Truth, then, in the only form in which it comes before us, consists of statements needing interpretation. And our point is that "a true statement misinterpreted" is—while the misinterpretation continues—indistinguishable from a false statement. A misleading truth is a "truth" only in the same way in which an inaudible sound is a "sound." But there would be no harm in calling it "potential" truth so long as we remember that this epithet means the opposite of "actual." The chief thing to remember is that no axiom can be guarded against attack by calling it undeniable, since it falls short of actual truth whenever it is misapplied. The criticism, therefore, that as used on a given occasion it is false, has (in that context) exactly the same destructive effect as if the axiom itself was false. Or, in other words, the defence that an axiom is *in itself* undeniable is an irrelevant defence against any possible attack on the axiom as a statement with meaning (pp. 176-8).

But, as we began to notice in Chapter III., the great majority of the rules on which our reasonings depend make no pretence of being axiomatic; they claim only to be "sufficiently" true. And the more closely this claim of sufficient truth is examined the more clearly we see that it means "sufficient for the use that is made of it here and now"—sufficient, that is, to prove a given conclusion with the help of a given minor premiss. Expressed in symbols: the rule "All X are Y" is sufficiently true to prove that "S is Y" if (and only if) it is true when interpreted so as to cover the case of S.

Thus, it is the need of an unambiguous middle term that best explains the dependence of "truth-or-falsehood" on consequences. Not only do rules get their meaning from the facts (or cases) they are intended to apply to, but predicate terms get their meaning only by bringing the subject under some rule. A rule detached from all application, and a predication which fails to tell us what may be inferred about S, are equally meaningless since they *lead to* nothing. The meaning of a statement, whether of rule or of fact, consists entirely in the distinction between real and sham assertion, the puzzle about the degrees of practical value in truths is seen to be irrelevant. The real difference between the old and the new logic has nothing to do with it, but only with the avoidance of sham explanations of meaning. The old logic never even becomes aware of the fatal confusion between assertion and sentence which is covered by the word "proposition." According to it, if we get one proposition from another or others we have arrived at the end of a process of inference, and have got a "conclusion." But the so-called conclusion itself may need interpretation before it becomes to its possessor more than a meaningless (or misleading) string of words. Are we then to regard inference as the mere substitution of sentence for sentence to infinity, or can we discover some less idle reason for its existence? Modern logic says we can. It says that the whole process of inference or interpretation exists for the sake of helping us to choose between "yes" and "no" in problems of action. This is quite compatible with the recognition that steps of theoretical work are required to reach a practical result. The purpose which directs them, or even the general desire to "improve our minds" so as to make them better instruments, is what keeps the theoretical steps from being *merely* theoretical.

This latter phrase may serve as a text from which to point out certain other truths which are deducible from our two main principles jointly. One of the many departures from tradition which the modern logic makes is in its much more consistent recognition of the difficulties of distinction and definition, so that it always distrusts "mere A" as a satisfactory account of anything—until the phrase can be shown to be required for some special purpose which renders it harmless. On the other hand, the victims of the old logic can almost be known at a glance by their habit of scattering the words "mere" and "merely" at large over their writings, apparently without a qualm. So ingrained is the habit that they often unconsciously scatter these words over their opponents' writings also, even when the latter were purposely and expressly written without them. Thus "Truth is practical" becomes in their hands "Truth is *merely* practical," and there has even been an instance[1] where it was supposed that one who was intending not only to criticise but to destroy ("remove") the distinction between practice and theory would be likely, in the same breath, to use the epithet "merely practical."

In part, no doubt, the habit may be accounted for as a literary defect—like the excessive or inappropriate use of adverbs such as "quite," or "simply," or "utterly," or "literally." But we are not here concerned with questions of style. It is only so far as the words "mere" or "merely" are used *to beg a question* that we need find fault with them. Apart from this possibility the words are useful enough, and it is often better to use them than to leave them out.[1] It would, for example, have been harmless, though unnecessary, to have written (just above) "questions of mere style." The logical rule is that we can safely talk of mere A and mere B where, and only where, the parties concerned—whether speaker and audience or two disputants—are agreed about the application of the distinction between A and B. Even a distinction left undefined, like that between questions of style and questions of logical right, may be taken as understood so long as no difference of opinion about its application has arisen. What logic cannot allow is that where one party disputes the value of a distinction, the other party should, in the same context, assume that "mere" A and B are intended. If, for instance, I suggest that the argument, "This is self-deception and therefore not hypocrisy," lacks cogency owing to the defect of the distinction referred to, your habit of meaning "hypocrisy" as *mere* hypocrisy is a poor excuse for assuming that I take the distinction in the same uncritical way.

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[1] Referred to in *Mind*, N.S., No. 72, p. 639.

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[1] The reader will find plenty of occasions where they are used in the preceding chapters, but if he can find a single instance where they are used so as to beg a question, I will gladly apologise and withdraw the word.

On the other hand, at p. 17 of this book certain kinds of dispute were dismissed as "mere preliminaries of argument," thus applying a distinction between argument proper and its preliminaries. It might conceivably have been meant that this is a perfectly clear distinction; but the meaning expressly stated was that it is only a by-your-leave distinction, to be used in this manner for rough purposes and as long as the reader raises no objection. It is a use of the distinction which is confessedly undefended except on the ground of a slight convenience; it claims to be no more than a postulate for immediate purposes. Just in the same way any one might propose first to talk about truth on the assumption that it can be clearly distinguished from error, and afterwards to deal with some of the subtler difficulties of that distinction. But as soon as the difficulties of a distinction—*e.g.* between truth and error—come into question, all talk about absolute truth and mere error becomes irrelevant. When I suggest, for instance, that error necessarily has a basis in truth, or is truth *plus* a distortion, or *minus* an aspect, the reflection that "mere error is mere error" does not apply. You might as well argue against the view that all water contains impurities, on the ground that water, as such, is merely H_2O.

To sum up: any expressions like *mere* A, or A *as such*, have the same defect as the expression "simple fact." They have their uses, but are harmless only when used by leave of both parties in a dispute; and even then only until some third party, later on, happens to discover defects in them as applied. And this, we now see, is another way of saying that the application of any distinction is *questionable*, and that to raise a question about it may at any time be worth while in the interests of truth. The doctrine that all distinctions are questionable as applied is deducible partly from the doctrine that every particular case has peculiarities over and above the longest list of descriptive names we can apply to it—for that is what makes all description *indefinite*—and partly from the doctrine that meaning consists in application. To apply a distinction is to found an argument upon it (p. 223), and until this is done the distinction remains up in the clouds, and the judgment that it is a good or a bad distinction has no point of leverage. Apart from special application, every distinction is both good and bad at once: good, because (since there is difference everywhere) there is no distinction without a difference; and bad because (since there is difference everywhere) the only names by which we can describe the contrast are indefinite.

It is worth noting also that the whole use of the notion of importance, in logic, is in connection with the difficulties of distinction and definition. There is difference everywhere, but not important difference; and there is vagueness everywhere, but not important vagueness. Every distinction used in a context, we saw (p. 222), makes the claim that the difference it registers is an important one. What justifies the use of a distinction between A and B is always the supposed fact that there is important ("essential") difference between them—that for the purpose of the moment they do not belong to the same class, and that the apparent analogy between them is a false analogy. If a class X needs, for some purpose, to be subdivided into AX and BX, that is because the distinction is important; and if S is to be judged truly a case of X, that involves the judgment that its individual peculiarities are, for a given purpose, unimportant; every detail that we think worth noticing, or negligible, obtains either character by virtue of its bearing on the purpose in hand. And similarly with vagueness; the demand for a definition is justified only where the vagueness is important—only where the purpose of making clear the meaning of a particular statement depends on it. The impossibility, therefore, of ever achieving perfect definition is a small matter; definition that is sufficient for a particular purpose is all the definition we need.

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